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ORIGINAL ARTICLES.

HOSPITALS FOR THE INSANE—THEIR SCOPE AND DESIGN.

BY EDWARD F. WELLS, M.D.

CHICAGO.

Shall the State have the custody of all its insane, or shall certain classes be relegated to county care? Shall the State care for the acute and the chronic insane separately or shall the hospital and the asylum be combined in one institution? Shall employment, especially agricultural, be afforded the patients, and if so to what extent? Should epileptics be received into insane hospitals or should they be cared for in a separate institution? Should any class of the insane be "boarded out," as practiced at Gheel, in Scotland and in Massachusetts? What should be the scope and design of the modern institution for the insane? These are questions of perennial and engrossing interest to the social economist, the legislator, the executives of our States and to the public at large, and they will be considered, with especial reference to the present status in Illinois, as fully as the limits of this paper will allow.

STATE VERSUS COUNTY CARE.

Every person adjudged insane and requiring other than family care—acute or chronic, curable or incurable—should be under the control of the State. This is in the line of the opinions expressed by almost every one who has given the subject any special consideration. This entire ground has been so often gone over that another review may well be omitted and attention will only be asked to a limited field.

In the Report of the Board of State Commissioners of Public Charities, of this State, for 1890, page 104, occurs the following paragraph:—

> "In the present report and chapter will be found accounts of ten naked patients, six men and four women, in Adams County; an insane woman confined in a pen in Bond County; an insane man in Boone County who is so troublesome that the keeper is paid extra for taking care of him; a miserable pen in DeKalb County; another in Franklin County; the insane department in Fulton County is declared a nuisance which should be abolished; in Jackson County three idiots, one of them an epileptic, are taken care of by an insane woman; in Jefferson County an insane woman sleeps alone in an outhouse; in Kane County, where fourteen insane are locked up, they make day and night hideous, and thirteen of them are disposed to denude themselves; in Knox County a naked man was found; in McHenry County the authorities are compelled to care for a man who can not even feed himself; the new insane department in Menard County already smells to heaven; the insane department in Montgomery County is condemned as unfit for use; the same is said of that in Shelby County; in Stark County two steel cages have been purchased for the insane, six by seven feet in size; in Wayne County the insane are filthy and ragged; Whiteside County has a naked insane woman on straw in a box."

Contrast this picture of county care, with its evident lack of medical supervision, of trained attendants, of facilities for classification and of suitable accommodation, with the intelligent and humane care given the insane in the four State hospitals, and there will be a ready appreciation of the force and sufficiency of some of the reasons upon which is based the opinion expressed.

There can be no doubt in the mind of any reasonable person that the circumstances which made it possible, in 1890, to frame such an indictment against the county care of the insane as that embodied in the quotation above given, were largely brought about by an evasion, by the managers of the State hospitals, of the last clause of Section 3 of an Act to regulate the State charitable institutions, in force April 15, 1875, which provides:—

> That, in the admission and retention of patients, curable and recent cases shall have preference over cases of long standing, and that violent, dangerous, or otherwise troublesome cases shall have preference over those of an opposite description.

Human nature is much the same the world over, and so long as the laws permit insane patients to be returned to the counties by the State institutions, it will occasionally occur that trustees and superintendents of State hospitals, biased by self-interest, will allow patients such as those above described, to find their way back to the county asylums, the while harmless and easily cared for cases are being shown to visitors in the front wards of their hospitals. The remedy for this evil lies in prohibiting, absolutely, the care of the insane at the hands of every county in the State, with the possible exception, at present, of Cook. The prohibition might be omitted in exceptional instances, as for example, in the case of a mild, quiet, harmless, chronic pauper patient, who would be happier in the county almshouse, with its more elastic rules and greater freedom. In such a case the patient might be paroled to the county, the latter receiving a stipend from the State institution. He should, however, remain under the control of the hospital and should be visited at regular intervals by one of its medical officers. The hospital should also receive regular reports from the almshouse superintendent and physician and, at least once a year, a special report from the visiting agent of the Board of State Charities.

SCOPE OF THE INSTITUTION.

Certain classes of the insane require institutional accommodation of a different and slightly more expensive character than that which is amply sufficient for the ordinary chronic and incurable classes. Of the former may be mentioned the recent admissions; the acute cases; the weak and helpless; the sick and injured; the suicidal and homicidal; the filthy; those who denude themselves, etc. These require for their care and treatment wards of smaller size and a larger proportion of superficial space, together

with accommodations for a greater number of attendants—in short, *hospital* accommodation. The ratio of these to the other classes may be estimated at about one of the former to five of the latter.

Another group of cases would include the convalescents; the mildly insane; those with lucid intervals; the quiet; the well-mannered, etc. These may, for the most part, be treated with much freedom and require, so far as practicable, home comforts. Wards for their accommodation need neither hospital nor prominent custodial equipment, and only a small staff is required for their care. These classes constitute about one-sixth of the insane. The remaining two-thirds form the bulk of the chronic and incurable classes which need simply safe and comfortable asylum accommodations and care.

COMBINED OR SEPARATE INSTITUTIONS FOR THE ACUTE AND CHRONIC CLASSES.

Because a very large proportion of the insane are cases of long standing and hopeless it has been proposed, on many occasions, to care for these in separate institutions, cheaply constructed and conducted. This has been urged chiefly from an economic standpoint. In this connection it may be said that, as a general proposition, the cost of hospitals in the past has not been determined, in any great measure, by the character of the patients to be treated. It has been shown that the proportion of patients requiring special hospital facilities, which add but little to the expense, is only about one-sixth of the whole number. Is it not as reasonable to cheapen, as far as practicable, the construction of the wards for the remaining classes in connection with a general as with a special institution? Unhesitatingly, yes. As a matter of fact, the cost of these institutions is governed almost entirely by their size; the cost of the central plant; the character of the construction of the ward buildings; the technical knowledge employed in formulating plans and the efficiency of administration during construction. In erecting these great eleemosynary institutions there should be, in the matter of cost, a happy medium which should be earnestly sought. The expenditure of vast sums for useless accommodations, expensive administration buildings or costly embellishment should be absolutely interdicted, but if this wasteful extravagance is to be so severely deprecated, what words shall we use in condemning the criminal parsimony which erects flimsy fire-traps—lacking only time and opportunity for affording a horrible holocaust of the helpless insane wards of the State?

For practical purposes, insane hospitals, in their construction, may be divided into three classes:—1, ordinary, or quick burning construction; 2, slow burning, or semi-fireproof construction; 3, strictly fireproof construction. Justice, humanity and true economy should prevent the erection of buildings of the first class. Buildings of the second class may be allowable, provided the roofs and attics are made indestructible, the buildings not more than two stories in height and with a proper arrangement of rooms and exits. The recent and remote experience of this State; a correct appreciation of the obligations of the State to those whom it compels to inhabit these structures and a true economy point unwaveringly toward the third class as the proper one to be adopted. Fortunately the comparatively small additional expense of fireproofing buildings places this form of construction within the reach of, certainly the great State of Illinois. Generally speaking, it may be said of buildings for the insane that if they are very cheap they are not safe, and if entirely safe they can not be very cheap.

The first, and in many respects the most notable example of the establishment, on any considerable scale, of a separate institution for the exclusive use of the chronic and incurable insane was that at Willard, in New York. This asylum was opened in 1869 and its capacity gradually enlarged to 1,938. It has 904 acres of land and the estimated value of lands, buildings and equipment is $1,541,000, or a per capita rate of $795. The character of some of the construction may be inferred from a statement to the State Commissioners in Lunacy, in 1891:—

"A great deal was done during the year in the way of extraordinary repairs . . . The greater part of the foundation walls of detached group No. 2 were taken down and rebuilt." "A portion of the buildings of this institution was formerly the property of the old State Agricultural College."

In 1881 the State of New York established, at Binghamton, a second asylum for the chronic insane. This institution has 1,057 acres of land and a total valuation of $759,375. The capacity is 1,050, thus giving a per capita cost of $723.

These two asylums for the chronic and incurable insane were never satisfactory to patients, their friends or the medical officers of these and the other hospitals of the State, and in 1890 the project of the separate care of these classes was definitely abandoned by the Legislature. These hospitals now admit all classes of the insane and the other six State institutions retain their chronic cases. Dr. T. S. Armstrong, late superintendent of the Binghamton Asylum, in his report for 1888, mentions one of the objections met with as follows:—

"Many patients coming to this institution get the idea that they are incurable (as many of them are), and that they must remain here so long as they live. . . . To them it blots out all future prospects of recovery, and of a return to their home and friends. The mental, moral and physical effect of this is most unfortunate."

The Legislature of Massachusetts, in 1890 and 1892, authorized the building, at Medfield, of an asylum for the chronic insane, with a capacity for 1,000 patients and to cost, exclusive of expenses for land and administration, $500,000. In order to keep within the appropriation, buildings were erected which, when nearly completed, were condemned as being too unsafe for occupancy. To make the fire-traps safe it was found to be necessary, at enormous expense, to replace the hollow wooden partitions by brick and terra cotta; the wooden supports of the floors and roof by iron beams and columns; to excavate for additional foundations; to provide additional means of exit in case of fire, etc. It is safe to say that these changes, together with the suits for damages which were expected to follow, will bring the total cost to a point far beyond the original estimates.

Pennsylvania began, in 1891, at Wernersville, an asylum for the chronic insane, with a capacity of 800. It has only recently been opened. The State Committee on Lunacy say, in their report for 1892, in considering its success:—

"The success of this asylum will greatly depend upon the appointment of the medical officer and his subordinates. All such officers should be shown to be in harmony with the theory of the separate care of the class for which the institution is intended."

The above four instances are the only examples, so far as my information extends, of the separate care, upon a large scale, of the chronic insane in institutions especially established for this purpose by any of the States. Of these, two have been abandoned after trials of twenty-two and nine years, respectively; one has been inaugurated within the past few weeks, and one is yet in process of construction.

The department for the chronic insane of the Worcester hospital and the county asylums of Wisconsin are not considered germane to this subject. Of the latter Dr. Walter Kempster says:—"The so-called 'Wisconsin plan' does not meet the conditions which an enlightened people demand, and sooner or later will be supplanted by some such management as the great State of New York has wisely adopted, and which I believe to be just and right."

The many arguments against the separate care of the chronic insane have been advanced so often and so forcibly during the past thirty years that they require at my hands no extended mention. It must be clear to any intelligent mind that every advantage of economical provision and maintenance, of comfort and occupation, which the chronic insane may have in separate asylums may be afforded them in hospitals for all classes; and further, that if any division of this kind will cost less for the chronic, it will add correspondingly to the cost for the care of the acute cases.

AGRICULTURAL EMPLOYMENT.

It has always been recognized, more or less fully, that occupation is useful for the insane. Thus the ancient Egyptians treated their insane by "amusement, occupation and healthful habits." It was occupation, especially in tilling the soil, that has made the Gheel colony a possibility and in the present century the advantages of having a large farm attached to hospitals for these classes have been fully appreciated since 1821, when Esquirol established his farm and called attention to the benefits derived therefrom. In this country it is a firmly established custom, from which reason and experience would not warrant a departure. The amount of land attached to a few of the leading hospitals, together with the proportion per patient, is herewith given:—

State.	Hospital.	Acres.	Capacity.	Per patient.
Massachusetts	Westborough	336	405	.83 acres
"	Danvers	255	863	.29 "
"	Northampton	493	479	1.05 "
"	Taunton	172	698	.24 "
"	Worcester	438	650	.67 "
New York	Utica	225	700	.32 "
"	Poughkeepsie	633	830	.76 "
"	Middletown	281	675	.41 "
"	Buffalo	203	525	.38 "
"	Ogdensburg	950	1,500	.63 "
"	Rochester	35	300	.11 "
Indiana	Indianapolis	160	1,524	.10 "
"	Evansville	160	400	.40 "
"	Richmond	309	434	.70 "
Minnesota	Rochester	480	630	.76 "
"	St. Peter	673	940	.72 "
Iowa	Independence	580	800	.72 "
Illinois	Jacksonville	160	1,180	.13 "
"	Elgin	510	1,100	.64 "
"	Kankakee	840	2,000	.42 "
Totals and averages, 21 hospitals		7,893	16,624	.47 acres

In my opinion an hospital intended for all classes of the insane should have at least one-half acre of good arable land for each patient, and double this amount would not be excessive.

In regard to the proportion of male patients—of mixed classes—who are able to work upon a farm, statistics give us no reliable information. As the result of much inquiry and personal observation, I am of the opinion that the number of these patients who are able to work and who would be benefited by out-door employment is much larger than is generally supposed. It may be reasonably assumed that, in round numbers, 25 per cent. of hospital patients are obviously unfit for such employment, and of the remainder probably two-thirds could be advantageously employed in this manner. The spirit of our people is opposed to employing women at farm work, but an equal proportion of female patients may be given, in other directions, suitable and healthful employment. Useful employment is pleasurable and remediable to the insane while enforced idleness is a grievous punishment. Experience has long since demonstrated that properly regulated employment, together with an abundance of good food are prime factors in bringing about the result of a healthy, quiet and contented hospital. How often has not every one who has had practical experience with the insane seen restless, excited and sleepless patients become quiet, contented and sleep like babes under the influence of interesting occupation and a liberal dietary!

EPILEPTICS.

Epileptics who are insane should be cared for in hospitals for the insane, rather than in institutions for epileptics. If this point is conceded the erection of an institution for epileptics would not relieve the overcrowding in the hospitals for the insane. The fact, however, that the non-insane epileptics require a special care which can not be given them in the county almshouses, renders it highly desirable that such of these as are public charges should be given a State institution for their care. Such an institution should be as largely industrial as possible and might be made nearly self-supporting. According to the Report of the Board of State Charities for 1892, there were in the county almshouses of this State, 247 epileptics—140 males and 107 females. These, together with the purely epileptic in the Institution for the Feeble-Minded, and those awaiting admission into the latter, would be sufficient to fill a large institution.

BOARDING-OUT SYSTEM.

In the legendary period of history an Irish maiden fled to Flanders to escape the persecutions of a cruel father. She was here discovered by her unnatural parent and after suffering great indignities at his hands died and was buried in the chapel at Gheel, near Antwerp. The patient fortitude displayed by the young girl led to popular sympathy and, finally to her canonization as Saint Dympna. By some means, not now clear, the belief became prevalent that miraculous cures of those affected with mental disorders were brought about by worshiping at the shrine of St. Dympna, and as early as the seventh century the insane began making pilgrimages thence, hoping to find relief from their infirmities. These found entertainment, during their sojourn, in the houses of the neighboring peasants. In some cases their stay was greatly prolonged and in not a few instances they were abandoned by their friends and relatives. Many peasant hosts continued to keep these abandoned lunatics and, to lighten the burthen of enforced hostship the guest was required to assist in the peasants' work. In some cases, also, the poorer pilgrims were received as guests conditioned upon their performing services to pay, wholly or in part, for their keep. As time passed it became apparent to the peasantry that the care of the insane was prof-

itable to the community, both directly from the money paid by those able to pay and from the service rendered by those unable to pay in money. Unfortunately there accumulated a class too poor to pay and unable to work, and the burthen thus produced was relieved by the State paying an annual stipend for their keep. In this manner, after centuries of gradual development, has been formed the peculiar community of Gheel, wherein peasants receive into their homes, as guests, the insane and are recompensed therefor by a stipend from the State, the estate of the patient or by his labor.

In 1851 the Belgian government assumed control of the insane at Gheel, established an infirmary, provided for supervision and proclaimed regulations for the host-guest relationship of peasant and patient. The village embraces a large agricultural district and contains about 11,000 inhabitants, including 1,800 insane. The latter are, for the most part, accommodated in the homes of the peasants, not more than two of each sex being allowed in one house. The system seems to be locally satisfactory.

The success of the Gheel colony has led to the query whether this boarding-out system, modified to meet local requirements, might not be advantageously adopted elsewhere. Two lunacy boards, notably—those of Scotland and of Massachusetts—have answered this question affirmatively, and in both localities the system has been in operation long enough for us to judge its results.

In Scotland, where the boarding-out system has been in vogue a great many years, it has met with a fair measure of success. As a rule, patients are dispersed and are not concentrated in villages. In some instances, however, the harmless and incurable insane of the larger centers of population, as for example Edinburgh and Glasgow, are placed, to the number of ten to fifty in certain villages, but the practice is not considered desirable. Not more than four patients are permitted in any one house, but the actual number scarcely ever exceeds one or two. They are regularly visited by the visiting agents of the Lunacy Commissioners, and are under the control of these officers. So long ago as January, 1875, Sir James Coxe, one of the Commissio ners, in a letter, says:—

"There is a growing difficulty in procuring and retaining suitable accommodations. . . As a rule, the chronic patients removed from asylums are sent home to their parishes to live with friends."

This difficulty of finding suitable homes for those having no friends, willing to assume their care, has increased rather than diminished, and the Commission, in their report for 1884, make special mention of the fact:—

It was being forcibly recognized in Scotland that great care was required in the selection of households in which lunatics could be safely and advantageously "boarded out." It was realized that if the system was not to be discredited, more and extraordinary care would be needed in the sending from the asylums only suitable cases and finding for these congenial homes. It had been noted that where the family as a whole were uncongenial to the temperament of the patient the latter was often soon returned to the asylum in an excited and miserable state. It could not be doubted that, in some cases at least, mischief may be and is done by "boarding-out" harmless lunatics in households where they are exposed, not simply to privations, but to irritation and petty grievances hard to bear.

With the most strenuous exertions it has never been possible to get out, in this manner, any large proportion of the insane, notwithstanding the well-known docility of the Scotch lunatic.

Massachusetts began, in 1881, to employ the "boarding-out" system in the care of a small portion of her insane.

During the first year 5 were "boarded-out;" during the second year the average number out, was, 21; third year, 60; fourth year, 113; fifth year, 94; sixth year, 126; seventh year, 142; eighth year, 168; ninth year, 164. Of the forty-seven thus sent out in 1892 forty-three were placed out for the first time. Of these, seven were returned to the hospital; two from persistent use of bad language; four for non-conformity to family life and requirements; and one because of frequent elopements. All of these, upon their return to institution life, immediately resumed their former quietude and readily acquiesced to existing rules.

Previous to making the change from institution to family life it is the custom to obtain the consent of the patient, if sufficiently intelligent; of the friends, and, if a pauper, of the overseers of the poor. Of this phase of the subject the Board of Lunacy, in their report for 1893, says:—

"It not infrequently happens that patients who appear suitable for family life object to the change, being fond of the regular and pleasant life at the hospital; or their friends think the change unwise; or overseers of the poor object, both on the score of economy and dislike of the system. More women than men are boarded out, and are generally preferred to men as boarders. Applications for boarders are filed, and the families are visited and carefully examined. After being placed, it sometimes happens that a patient has to be transferred several times before a suitable family can be found. During the last few years so many patients suitable for boarding-out have been removed from the hospitals . . . that but a small number has been left; these, from time to time have all been placed in families. In future the number will increase but slightly, only such cases occurring as naturally develop in the institutions."

In their report for 1894, the Board again expresses its opinion:—

"It will be seen that the number of insane boarded in families has somewhat decreased during the year, although persistent efforts have been made to place out all who appear suitable for such treatment."

Without special thought or design there has been developed a most admirable system of dispersion of the harmless chronic insane. I refer to the parole system, under which properly selected cases are sent home to the friends and relatives for immediate care, but remain under the jurisdiction of the hospital authorities. This necessarily has a narrow field, but it is fully as wide in its applicability as the boarding-out system. More attention is given this feature in some institutions than in others, but experience shows that if the authorities are earnest and persistent in the matter a reasonable proportion of the insane may be very happily cared for in this manner. It is probable that the extension of the system, if thought desirable, might be stimulated by paying the friends having the patient in charge, a sum equal to the cost of his subsistence were he in hospital.

The extent to which the parole system is utilized in a few State hospitals is shown in the following table:—

State.	Hospital.	Date.	Patients in Hosp.	At Home on Parole	Per Cent.
South Carolina	Columbia	Oct. 31, 1893	796	37	4.64
Ohio	Columbus	Nov. 15, 1893	1,197	106	8.85
Minnesota	Rochester	July 31, 1888	704	26	3.46
"	St. Peter	July 31, 1888	954	25	2.62
Nebraska	Lincoln	Nov. 30, 1890	326	13	4.00
Kansas	Osawatomie	June 30, 1890	519	34	6.55
Illinois	Kankakee	Nov. 19, 1894	2,060	78	3.73
"	Jacksonville	Nov. 16, 1894	1,222	10	.81
"	Elgin	Nov. 18, 1894	1,115	30	2.69
"	Anna	Nov. 19, 1894	858	32	3.75
Totals and averages, 10 hospitals			9,823	391	4.00

It is thus seen that about 4 per cent. of patients carried upon the hospital registers are at home on parole.

Desiring to obtain definite information of the workings of this system in this State, I recently wrote the superintendent of each of the large public hospitals for the insane inquiring as follows:—

1. How many patients have you on your register?
2. How many are at home on parole?
3. Is any supervision exercised over patients out on parole?
4. Is any special effort made to get harmless chronic cases out on parole?
5. Do you approve the system?

To these questions the various superintendents courteously replied as follows:—

Dr. Arthur Loewy, of the Northern, reports 1,115 patients on the register, with 30 at home on parole. Paroled patients are supervised by correspondence with their friends. He always recommends the removal of harmless chronic cases whenever they can be cared for at home. He approves the parole system.

Dr. W. C. Lence, of the Southern, states that at his institution no supervision of paroled patients is exercised, except to instruct the friends to return them if they become worse. Special efforts are made to get patients out on parole, and he approves the system.

Dr. J. F. McKenzie, of the Central, says: "We exercise no supervision over patients on parole. They simply have the privilege of returning within the quarter without further legal proceedings. We are compelled to make considerable effort to get chronic cases sent home in order to make room for acute ones, as our institution is now, and has been for several years, full to overflowing. I think the system of granting parole is a good one."

Dr. Clarke Gapen, of the Eastern, says: "There is no special supervision exercised over patients who are out on parole, except when we send a special attendant to accompany them, which we do at times. There has been no special effort made to get harmless chronic cases out on parole. I think, however, that much could be done, not only to relieve the institutions, but for the benefit of the patients themselves by such efforts. . . . There are many patients in this Institution who, I think, could get on outside. . . If the friends or county authorities could be induced to take a proper interest in them. . . In answer to your fifth question, I would say that I do approve of the parole system, as it is difficult for us to say positively when discharging a patient whether such patient is in condition to bear the strain of ordinary life or not, and this can generally only be ascertained by trial. The quasi-criminal method of commitment in vogue in Illinois, makes it a very unpleasant thing for a half-recovered patient to be re-committed to an institution."

Dr. McGrew, of the Cook County Insane Asylum, says:—"We have 1,067 insane patients on the register. Very few are at home on parole. . . . No special supervision by the asylum authorities is exercised over patients after they leave the institution. Friends are required to assume all responsibility after patients are removed. . . No special effort is made to get harmless chronic cases at home on parole; neither is any great objection made to friends removing them if they desire, because of the over-crowded condition of the wards. We believe that the insane, including the harmless chronic cases can be better cared for—with more advantage to themselves by the asylum system rather than at home."

The advantages of the parole system, as practiced, over the boarding-out system lie in the fact that the harmless chronic insane are in the hands of their relatives and friends, who are apt to take in them a more kindly interest than would strangers who were actuated solely by mercenary motives. The subject is one of interest and practical importance and well worthy of extended inquiry and careful consideration.

(To be continued.)

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THE TREATMENT OF EXTENSIVE BURNS.

Read before the Chicago Pathological Society, Sept. 10, 1894.

BY EMANUEL FRIEND, M.D.
CHICAGO.

Of all accidents which befall the human race none, in my opinion, call for more speedy and at the same time scientific treatment to alleviate pain, shock and subsequent infection than an extensive burn of the second or third degree, may it be caused by the mere flame, molten metals, boiling fats, hot water, steam and the like. It is not the object of this paper to go into the minutiæ of etiology, symptomatology or pathologic anatomic changes characterizing the different forms and degrees of burns, but merely to hint at the anatomic changes taking place in the three gradations under which all burns are classified, and suggest a method of application of one of the oldest and best of therapeutic measures, namely water.

In burns of the first degree, dermatitis combustionis erythematosa, we get a mild hyperemia of the papillary vessels of the corium with consecutive paresis and passive congestion, which causes a slight swelling and redness. If an exudation takes place, and such is generally the case to a greater or less extent, a yellowish discoloration takes place; whether this is caused by the instantaneous application of a flame or by the heat of the sun, as in erythema solore, the changes are practically the same.

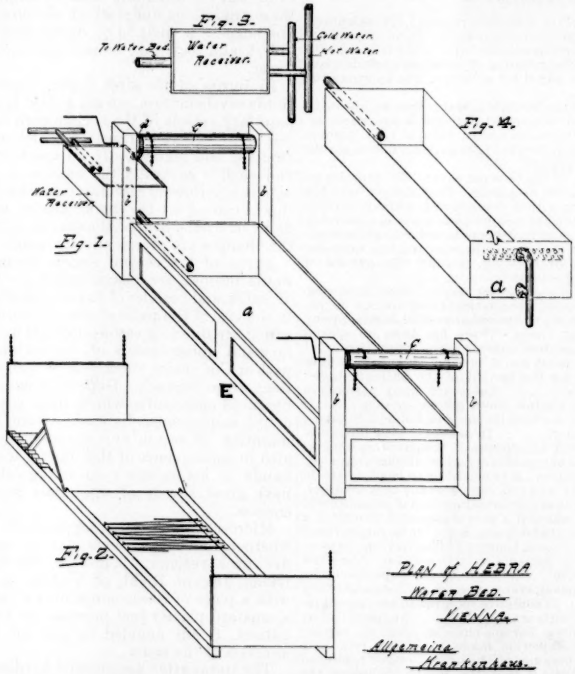
Burns of the second degree, dermatitis combustionis bullosa, are characterized by the appearance of bullæ, and vesicles of various sizes from a pin head to the size of the palm of one's hand, and even larger, which are due to a serous exudation from the papillary and upper vessels of the corium separating in part or the entire thickness of the epidermis from the corium beneath. Generally, one sees innumerable blebs and bullæ, which have ruptured from, no doubt, sudden over-distension from the rapid accumulation of serum and corpuscular elements; and also in consequence of the trauma, from the patient's hands, in his endeavor to extinguish the flame, we have great shreds of epidermis hanging from the corium.

Microscopically, the appearance is the same, whether the bullæ or vesicles be caused by steam, fire or a vesicant. Through the kindness of my friend, Docent Riehl, of Vienna, in presenting me with a piece of tissue containing a vesicle, caused by a mustard plaster just previous to the death of the patient, I am enabled to give the following brief analysis of the same:

The tissue after fixation and hardening was stained with lithium carmine and picric acid, Zeiss ocular No. 3, obj. a. On either side of the field one sees the remains of the epidermis which has been lifted from the corium beneath, in this specimen having been ruptured in the center, possibly in process of preparation; still adherent to the under and outer surface one sees epidermoidal elements, indicating that just at this point separation had taken place in the stratum lucidum, while beneath and still adherent to the corium one sees intact rete malphigii with several layers of prickle cells. The center of the epidermoidal covering of this bullæ, or rather vesicle is lost, but the corium with its obliterated papillæ indicates that a complete separation of the rete malphigii and overlaying layers of epidermis had taken

place here. The contiguous papillæ are widened, the vessels dilated, while the connective tissue fibers are swollen and literally teased asunder by the exudate of serum, with its corpuscular elements; the latter having taken the lithium carmine stain quite markedly.

Burns of the third degree, dermatitis combustionis escharotica. In this degree the elements of the corium have suffered primarily from the continuous application of the heat, causing a mortification. According to the agent producing the same, the parts become charred, bronzed, or dried and leathery. Frequently one sees in the bronzed denuded surface, twig-like figures representing the coagulated and carbonized contents of the superficial vessels. The embeds, and a nurse in constant attendance. Through the kindness of Professor Kaposi and his first assistant, Dr. Lukasiewicz, now Professor of Dermatology in the University of Zürich, Switzerland, I was enabled to study these cases, by having access to this water bed ward at any and all times. Of all appliances and devices invented by man to relieve human suffering, I know of none which is entitled to greater credit than the Hebra water bed in the treatment of burns. It is practically an oblong tank seventy-eight inches long, twenty-eight and one-half inches wide, twenty-one inches deep, lined with zinc, shown in the accompanying plan designated (Fig. 1 *a*). Supporting this tank are two head posts three by two inches and forty-nine inches in height, and two at the foot meas-



inent medico-legal authority, E. Hofman, of Vienna, has shown that this injection of the vessels does not become apparent when the body of a murdered person is subsequently burnt, and also that the deeper tissues are afforded a considerable protection by the superficial layers of the epidermis and corium. Thus has been shown in the cremation of bodies to what a great heat, continuously applied, the tissues must be subjected before an effect is perceptible on the deeper tissues.

In Vienna, all cases of severe burning are taken to the dermatologic wards of the Wiener Allegemeine Krankenhaus, and cared for in a room set apart from the general wards, provided with seven Hebra water

uring the same. (Fig. 1 *b*). Between both the two head posts and the two foot posts, is a windlass, (Fig. 1 *c*), both of which can be turned by means of a crank which is adjustable. At each end of the cylinder of the windlass is a chain, used to support an oblong steel framework or mattress (Fig. 2) which fits snugly to the inside of the tank, when lowered by means of the windlass. Along the sides of this mattress are placed hooks opposite one another, across which are strung wires (the same as the springs of our bed mattresses), to support a blanket, which is thrown over same, and the patient. At the head, or rather within about eighteen inches of the head of this mattress is attached an upright, serving as a pillow sup-

port (Fig. 2 *a*) which can be raised or lowered to suit the patient's convenience, it being supported by a cog and rachet arrangement, which is also found attached to the head windlass of the bed proper (Fig 1 *d*).

At the head of the tank (Fig. 1 *a*), but separate and distinct from same, is a water receiver (Fig. 3) connected to the tank by a single pipe; merging into this receiver is both a cold and hot water pipe, coming either from a range or boiler, according to the source of the hot water. The temperature of the water is hence regulated here instead of at the main tank. Naturally, the large tank (Fig. 1 *a*) is supplied with an escape pipe and a safety escape to prevent an overflow. (Fig. 4 *a*, *b*.)

Fig. 1 E represents the side woodwork of the bed.

Upon the patient's arrival, orders are given the nurse to prepare the water bed, whose arrangement as you have seen is so simple that an inexperienced hand can prepare it in five minutes. The temperature of the water should be about 25 or 26 degrees R., and increased after the immersion to 32 or 34 degrees R.

The patient is carefully lifted onto to the blanket covering the mattress, which is swung above the water's surface, which should reach to almost one-third of the top edge of the tank. Almost at the instant the patient is immersed his heartrending shrieks and moans will subside, and if asked after five minutes, regarding his condition, will state that he now feels comfortable. If necessary, stimulants can be given and if the patient be laboring under intense shock, the water can be made somewhat warmer than that which would give the most comfortable feeling to the patient, being gauged by the hand and thermometer. To the face is generally applied a mask of linen, saturated in carron oil. Within an hour or two, after the more acute symptoms have subsided, the patient is raised out of the water, catheterized, and the loose shreds of epidermis trimmed off and existing bullæ are tapped, care being taken not to remove the epidermial covering. Then the case is treated symptomatically.

As I have before stated, the object of these few lines is not so much the recommendation of the agent (as water has been used from time immemorial for the treatment of burns by both the laity and physicians) as it is the method of application, and consequently I would suggest the adoption of the water bed in all hospitals; possibly some ingenious member of the profession could suggest a plan by which the idea could be carried out in private practice, namely an apparatus adjustable to any bath tub.

I am certain that, had we been possessed of such an apparatus during my term of service at the Michael Reese Hospital, it would have been decidedly to the patients' advantage as well as our own.

The advantages claimed for the water bed are:

1. Relieving the patient almost instantly of the excruciating pain consequent on a severe burn, and following the application and removal of dressings afterward.

2. Producing more rapid cicatrization.

3. Relieving shock.

4. Preventing infection from erysipelas, pus micro-organisms, etc.

5. Prevention of amyloid degenerations due to the confinement of secretions by dressings.

6. Saving of expense of material and time in frequent dressing.

Patients may be allowed to follow this aquatic life for months and months, Kaposi reporting one patient having spent 385 consecutive days and nights in the water bed. They eat, drink, sleep and frequently gain considerably in weight in the bed. Not alone can burns be treated in this manner, but all forms of disease in which there is an extensive loss of epidermis as in pemphigus foliaceus, gangrene, or in chronic suppurating wounds.

FACIAL BLEMISHES; A PLEA FOR THE STUDY OF THE SCIENCE AND ART OF COSMETICS.

BY EDWARD H. SCHAEFER, M.D., PH.L.
KANSAS CITY, MO.

There are many affections and defects of the body that demand the attention of the physician, who, in applying his knowledge of how to relieve and accomplish a cure, thinks he has done all that he is able to do.

There is still one branch left, belonging to the external part of the human frame, to which very little attention has been devoted and even arbitrarily excluded from the province of medicine, and that is the science of cosmetics. Physicians have always searched for hidden troubles of the human economy, diseases that are internal, not discernible by the eye, thereby entirely ignoring the outward conditions of man.

That branch of medicine, intimately connected with dermatology, the science and art of cosmetics, has been until recently a kind of *terra incognita*, being exclusively in the hands of empyrics or non-professional persons. For ages, men, and women especially, have striven to enhance their personal attractiveness, augmenting beauty and symmetry to their forms. What remedial means and agents could be utilized in order to beautify face and body were the source of greatest speculation. Every one, man and woman, wishes to appear attractive, which naturally is as it should be, and all means that are employed in that direction to accomplish the desired end, are truly commendable. How often will a woman refuse to take medicine for some slight trouble, but can be persuaded with ease to do so, if she is reminded that some cosmetic blemishes might be the result. The impressions made upon us by persons depend largely upon their external appearance. Anything pleasing in its nature will be estimated in a favorable measure of opinion.

Our ideas relate more or less to esthetics, be it in the form of objects or persons. Women, knowing this perquisite to attractiveness have, since the remotest ages used all such remedies at their command that would heighten their bodily charms. We all are aware how concerned women often are about any eruption on the face, as for instance, acne, lenticular spots, chloasma and other facial blemishes too numerous to mention. Should this not in itself be a mild reminder of the necessity that the physician ought to concern himself more about those diseases of the skin that occur mostly upon the face and which often leave marks or imprints? How well could he apply his knowledge of the anatomy of the skin in making operations upon the face for tumors and other growths, so as to avoid leaving cicatrices. Young men and women may be seen walking along the streets, who have their faces literally disfigured

by acne, which often leaves its variola-like scars. If any one takes the trouble of observing he can see numerous people who have nævi, warts and pigmentations, such as freckles, chloasmata and port-wine marks on their faces and necks. How often do we not notice people whose faces are disfigured by scars, due to wounds that have suppurated a long time ago and have healed by granulation? Does it not appear to every thoughtful physician that there is still a wide field open to him in facial dermatology, if he only would try to do something in the line of removing or concealing facial blemishes by cosmetics? Wrinkles, the companion of approaching age, ought to be amenable to treatment, more so if they occur in the young.

Criminals often resort to the skill of surgeons in having certain marks removed from their faces in such a manner that not a vestige of former stigmata remains.

Among the plastic operations for the relief of hare-lip, cleft-palate, the operation of rhinoplasty, we realize the aim of surgery to establish the art of cosmetics. All those remedial procedures, that are employed in the form of hot or cold baths, in order to incite perspiration, as well as massage and gymnastics, are used for the sole purpose of adding beauty to the skin and complexion.

We have so many agents at our disposal that could be employed in removing all disfiguring marks of the face and other exposed portions of the body, as for instance, electrolysis, excision with the knife, skin-grafting, the application of acids and alkalies and many other methods that the discretion and inventiveness of the physician may contrive.

There is one most prevalent cutaneous disease which appears so often upon the faces of young people of both sexes. I refer to acne with accompanying comedones. This skin disease is curable and ought to be successfully treated in a few weeks if the attention be given to it as it deserves.

Another sub-specialty, advertised by non-professionals, namely "capillurgy," the art of destroying superfluous hair, should be practiced only by physicians.

In the field of facial dermatology very much can be improved upon, in view of the fact, that by applying ourselves to that branch assiduously and studying the true pathologic conditions found present in cutaneous diseases, we are enabled to treat them more intelligently and effect a cure in many cases.

BLOOD-SERUM THERAPY IN DIPHTHERIA

Read before the Chicago Medical Society, Dec. 3, 1894.

BY G. E. KRIEGER, M.D.
SURGEON TO THE CHICAGO HOSPITAL.

The blood-serum therapy of Behring, Roux and others is based upon the fundamental fact, that the blood of an animal which has been rendered immune against a certain disease has the power, when injected into another individual of the same or other species, to immunize the latter also against that disease. Suppose, for instance, we have a guinea pig immunized against tetanus or diphtheria bacilli and injected some of its blood into a rabbit, the latter would be protected for a certain length of time against infection of the germs or their poisonous products. Such products are especially dangerous and deleterious to the organism in diphtheria. If one intends to immunize an animal against the effect of diphtheria bacilli it will be necessary to increase its resistance against the toxic products of the germs, the toxins.

An increased resistance and finally an immunity is obtained by applying systematically such doses of the poison to the animal as are sufficient to make the latter ill without causing its death. As the tolerance of the animal increases, so does the immunizing power of the blood-serum increase, which has been proven by Ehrlich in reference to the vegetable poisons, and by Behring with bacterial toxins. The way of proceeding for the purpose of immunizing animals against diphtheria as advised by Behring, Ehrlich and Wasserman is by hypodermic injections of at first very small, and later, gradually increasing doses of diphtheria cultures and diphtheria toxins.

The latter, according to Roux and Yersin, is prepared by inoculation of beef-tea in large flasks with diphtheria bacilli. After the flasks have remained in an incubator for three to four weeks 0.5 per cent. carbolic acid or 0.33 per cent. trikresol is added, by which the germs are killed and precipitated to the bottom of the flasks. The liquid then contains the toxin in solution. From this solution the toxin can be prepared as a dry substance or it can be used while dissolved in the fluid. The effect of injections of the toxin, is fever, local swelling and the production of antitoxin. The latter is found in the blood of the animal after each injection and increases in quantity with the number of injections. This treatment is continued until the animal possesses a sufficient quantity of antitoxin. In order to estimate its efficacy, it is necessary to tap the animal, from time to time, for a small amount of blood with which experiments are made on others. Behring and Kitasato were the first who observed that such antitoxin is able to neutralize the effect of toxin, when mixed in a tube.

The mode of valuation of the diphtheria antitoxin, as advised by Ehrlich is this; of a toxin, the efficacy of which upon a guinea pig is known, a certain quantity ten times the minimum fatal dose, which may be 1 gramme is mixed with a number of different quantities of the blood to be examined, for instance 0.5, 0.25, 0.15, 0.10 gr., and with these four mixtures four guinea pigs are inoculated. The result will be that the one which received the largest dose of the blood together with the toxin shows no reaction; the one that received the second largest dose will suffer from an acute local inflammation, followed by necrosis, but otherwise be not much affected. The third will probably become quite sick and the one which got the smallest quantity of blood will die in forty-eight hours, from the same dose of toxin as the other received. Hereby we can find out which amount of blood of the first animal is sufficient to neutralize a certain quantity of toxin, and so the value of serum can be established. This is simplified if one has a material of a standard strength with which to compare others. Behring and Ehrlich therefore, prepared a serum of which 0.1 gr. is sufficient to neutralize ten times the fatal dose of toxin (for guinea pigs) and this they called "normal therapeutic serum." Of such normal serum one cubic centimeter was called the equivalent for one immunizing unit. According hereto a serum, of which 0.01 gr. is sufficient to neutralize ten times the fatal dose, would possess

ten immunizing units or would be a ten-fold normal serum, and so on. Ehrlich's experiments with normal serum in children, affected with diphtheria, showed that at least five hundred immunizing units are necessary to effect a cure, that is 50 gr. if the material is a ten-fold normal serum, or 5 gr. if it is a one hundred-fold normal serum.

Has the value of the serum once been established by a series of experiments as stated above, the animal is tapped for a larger quantity of blood which, being received in sterilized vessels, is placed on ice until coagulation has been completed and the serum been separated as a clean yellowish fluid. This with 0.5 per cent. carbolic acid now presents the material to be used for therapeutic purposes. The most suitable animals for which the serum may be prepared are horses and goats on account of their susceptibility,as well as because of the large quantity they are able to furnish.

Before speaking about the administration of the so obtained serum upon man, an item worth consideration may be mentioned. It is a matter of experience that in different individuals, even of the same family, diphtheria can produce symptoms materially different from each other. One child may at first present the common picture of angina, with white plaques on the tonsils, but will recover after a few days of discomfort. Another child may have laryngeal membranes which necessitate tracheotomy or intubation. A third one may show from the beginning on, a serious affection of the tonsils, throat and nose, with obstructions by thick membranes and suppuration, from the effect of which it can not be saved even by early tracheotomy.

These different symptoms have all originated from the same cause, the infection with diphtheria germs, bnt for reasons not fully explained apparently, however, depending upon individual disposition, the infection is followed by so different local and general effects. To establish the diagnosis under such different circumstances it would be necessary to make microscopic examinations. The question now is, In what cases will the administration of serum save the child? Starting from the fact, that the antitoxin must be given in certain proportions to the toxins present and that it works effectually only if the organism has not too long been preoccupied by the toxin it is evident that a curative effect can only be expected in an early stage or in a milder form of the disease. If the diphtheritic process already affects the bronchii and lungs, so that even tracheotomy is of no avail, the serum-therapy will do no better. Neither can recovery be secured if complications possibly due to infection with other germs have set in.

Equally doubtful is the prognosis if the toxins have circulated for a longer period, say three to four days because their paralyzing effect upon the nerves and ganglia of the heart can no more be eliminated. As, however, the application of the serum is an entirely harmless procedure it seems to be advisable to use it even in advanced cases, provided they are not perfectly hopeless. This has been made a principle in the antitoxin treatment in several hospitals of Berlin, with the effect that according to the latest report, the mortality of all cases has been reduced more than 20 per cent. Of 121 cases treated with serum, reported by Director Koerte, 81 or 67 per cent. recovered, while the average during the past four years was but 55 per cent. recovery. This statistic does not show as good a result as it would if the gravity of the present epidemic is taken into consideration. Of 106 cases not treated with serum on account of impossibility to obtain it, only 46 per cent. recovered which, compared with the 67 per cent. would give a reduction of 21 per cent. due to antitoxin. Much better even than this are the figures if the cases are classified according to their gravity:

Of forty-three very severe cases the result was 41.8 per cent. recovery, 58.2 deaths. Of forty-seven medium grave cases the result was 70.2 per cent. recovery, 29.8 deaths. Of thirty-one cases with but slight infection 97 per cent. recovery, 3 per cent. deaths. Of forty-two cases in which tracheotomy had to be performed 47.6. per cent recovered, 52.4 per cent. died against but 25.5 per cent. recovery in former years. Equally good results have been reported from other experimenters in Berlin and Dr. Roux in Paris. In regard to the effect of the injections it may be emphasized that they are absolutely innocuous. After 5,000 injections but 3 abscesses have been observed. The temperature does not increase nor are other general disturbances noticed. Locally, a tenderness or a harmless skin eruption is sometimes observed which, however, disappears after a day or two. Concerning the effect upon the tonsils and throat, the white plaques at first seem to spread after the injections; on the second day, however, the, mucous membranes discharge the infective material and the swelling of the glands is also reduced. Besides this local effect, a change in the general feeling takes place soon after the injection. Pulse and temperature return to normal condition in early cases within the first forty eight hours, dizziness and general weakness disappear, and the children soon become convalescents.

In case of a renewed increase of temperature, one would have to conclude that complications as a suppurative process or pneumonia are in progress. The effect of serum injections will not be pronounced, as mentioned, if either complications, for instance scarlet fever, are already present while the serum is applied, or the case is so far advanced that the toxins can not be neutralized, In such cases we have always to look for paralysis of the muscles usually affected, in spite of the antitoxin. The most preferable place for the injections is on the lateral part of the chest, below the axilla, where on account of the soft subcutaneous tissue even large quantities are absorbed. The application is made with the usual aseptic precautions.

The antitoxin prepared as advised by Behring in the chemic works in Hochst-am-Main is put in different flasks, hermetically sealed, which bear on the label a mark as to the efficacy of their contents.

No. 1 contains a serum with 600 immunizing units, to be applied only in fresh cases on the first or second day.

No. 2 possesses 1,000 immunizing units to be used in more serious cases on the first or second day or in less serious cases of longer standing.

No. 3. possesses 1,500 to 1,600 units, and is meant for adults or very severe cases of children. I have here the samples of antitoxin which are equal to No. 1 and No. 2 of the German preparation. As a rule, but one injection is given. If this, however, is found ineffective, another one should be applied the next day. It is usually unnecessary to give an additional treatment, either locally or internally; the only

thing advisable may be to cleanse the mouth with weak antiseptic solutions.

In case the serum is not intended as a curative, but as a prophylactic, the strength and quantity required is considerable smaller. In the average, 100 to 200 immunizing units are sufficient to protect a healthy child against the infection. How long such protection or immunity lasts has not been fully determined, and Dr. Kossel advises a re-vaccination, after three weeks, if the child is still exposed to conditions which allow the infection. Such small doses, however, would be sufficient only in case the child was not already in the period of intubation, which would place it under the class of an early stage. It sometimes may happen that children were infected, but for lack of visible symptoms do not get an adequate dose, in which case not the serum would have to be blamed but the mistake in sizing up the case.

In conclusion, I wish to say that these few practical remarks do not pretend to cover the subject of blood-serum therapy, and those who are more interested in this subject I take occasion to refer to a monograph on "Blood-serum Therapy and Antitoxins," issued January 1.

Everything considered, I believe we are on the eve of a revolution in treating infectious diseases, and perhaps other constitutional diseases, the nature of which was heretofore not understood, for lack of microscopic and bacterial evidence.

1003 Columbus Memorial Building.

HYGIENE OF THE ANUS AND CONTIGUOUS PARTS.

BY J. RAWSON PENNINGTON, M.D.
CHICAGO.

My object in writing this paper is to call attention to some of the most important points of practical every-day hygiene, as applied to the anal region; which, if we observed more carefully, would materially reduce the number of cases of ano-rectal diseases.

Failing to heed nature's call to evacuate the bowels, or, when heeded to attempt, as soon as seated, to force or hurry defecation by bringing to bear all the power of the diaphragm and abdominal muscles and force the fecal mass, which frequently contains seeds and other substances, with sharp edges, against and through the sphincter without giving it sufficient time to become thoroughly dilated, is a very common and frequent source of these troubles.

Dr. Eastman says: "This inordinate *vis a tergo* as often retards as expedites the matter, for human muscle, like human character, resists force, and in the case of the muscle under consideration, if overwhelmed by violence many times yields, at last, at the expense of its elasticity, the destruction of the hemorrhoidal veins and the laceration of the mucous membrane."

Now, recalling the fact that, in addition to this violence, the mucous membrane is everted during the act of defecation and that printed paper, hard and rough substances are frequently used as detergents, is it any wonder, with such favorable conditions offered for infection, contraction and development, that these diseases are so prevalent?

The use of printed paper, which is so universally and promiscuously employed, should be condemned, and the pernicious effects which are liable to follow its continuous employment, thoroughly impressed upon the laity.

Many of these papers and inks are poisonous. Quite a number of the inks contain nigrosin, arsenic, Paris blue (ferrocyanic acid), and other irritants, and some of them, being charged so highly with these elements, are labeled "poison."

Who is not familiar with the fact, that fabrics dyed with anilin dyes frequently produce violent irritation when brought in contact with the unbroken cuticle, and in some instances are sufficiently virulent to induce constitutional effects? This being true, is there not more danger in bringing these dyes in direct contact with the delicate and ofttimes lacerated mucous membrane of the rectum and anus?

The use of the above articles for detergent purposes, the former by mechanical injury and the latter by depositing irritants upon the mucous membrane, or cutaneous surface near the verge of the anus, induces an inflammatory condition terminating in abrasions, fissures, ulcerations, or, as Mathews says, "may produce such a condition of the mucous membrane as will ultimately end in hemorrhoids, etc."

These pathologic conditions, plus the temporary constipation they produce, place extra duty upon the external sphincter, which causes it to become developed out of proportion to the muscles involved in expulsion, wherein we have a very common cause of chronic constipation, and this frequently induces ulceration of the rectum, or sigmoid flexure, or both; and, because of the peculiar nerve supply to these parts, this condition may exist for months or even years, without either physician or patient suspecting it, and the individual is constantly treating for mental and nervous troubles, dyspepsia, uterine, kidney, heart and many other affections, which are purely reflex and can be relieved only by detecting and curing the rectal or sigmoid affection.

To illustrate the effect of minor anal irritation, I will briefly append one case:

Mrs. D., age 28, was referred to me in May, last, by my friend, Dr. Pynchon, to be treated for piles. I elicited that her bowels moved every fourth or fifth day only, and then after having taken from three to five compound cathartic pills, which it was necessary to follow with a large dose of salts or an enema. Examination revealed a spasmodic sphincter, hemorrhoidal tendency and a few small abrasions around the anus. I prescribed an aperient, a local application and advised frequent bathing of the anus. In a few days her bowels became regular, moving daily, and have continued so without further medication. Suffice it to say, that her general health materially improved.

The writer wishes not to be understood as saying that all vague or reflex troubles are due to rectal disorders; at the same time, however, he insists that emphasis must be placed on the undeniable fact, *that in the rectum exists the pathologic condition for more diseases than credit is given.*

Paper to be used as a detergent should be of a firm, smooth, soft and pliable quality and free from ink and other poisonous ingredients. There is nothing better in this line than pure tissue. Competition and demand, however, have caused the manufacturers to place upon the market many cheap, hard, stiff and inferior papers which are not only more expensive, but are not fit for use and should not be employed.

Another point, which I consider of very great importance, and one that is almost totally ignored, is regular anal ablutions.

Mr Allingham in referring to this subject, says: "Many people seem to forget that the anus requires quite as much washing as any other part of the body."

Mathews, in referring to patients with a predispo-

sition to hemorrhoids, says: "These patients should be instructed that any irritant to the parts, such as printed paper, as a detergent, should be avoided, and above all that a cold ablution of the parts should be made after every act of defecation."

Kelsey, in such cases, advises the free use of cold water to the parts at least once a day, and further says: "This is the best tonic, astringent and anodyne of which I have any knowledge, and its habitual use would prevent a very considerable portion of all hemorrhoidal difficulties."

The same general advice is also given by Cooper and Edwards. Hence, the consensus of opinion of eminent authorities is, that the anus should receive frequent and regular ablutions, and the Bidet, Fig. 1, to which I shall presently refer, is superior to all other devices for this purpose. Yet, notwithstanding the preponderance of evidence, very few of our water-closets are provided with any appliance for this important part of the toilet!

The Bidet, above referred to, made by J. L. Mott & Co., is readily attached to any water-closet, and is so constructed that the anus and contiguous parts may be thoroughly drenched with hot, cold or tepid water after each evacuation of the bowels; and by attaching a vaginal pipe, since the force of the jet and temperature of the water are easily controlled, it becomes a useful apparatus for vaginal injections.

PLATE 1098-G

Copyright, 1895, by THE J. L. MOTT IRON WORKS.

A simpler arrangement, however, and one that would answer most all purposes quite as well, is a miniature wash bowl fastened to the wall or otherwise, at the rear and on either side of the closet basin, near the seat. This basin is supplied with hot and cold water and has a waste connected with the closet bowl, that can be raised or lowered at will. From the tap, lint, fabric or tissue paper may be dampened for use, after defecation, or the waste closed and the bowl filled with water which may be medicated before using, if desired. No well appointed private water-closet is complete without some provision being made for this part of the toilet.

I find, upon inquiry, that many ingenious ways are devised for cleansing and bathing this portion of the human anatomy. Some soak a few pieces of toilet paper in the wash bowl of the bath-room; others flush the closet basin, then dampen some paper, for cleansing the part, in the water with which it refills. In both instances it is very inconvenient, and in the latter there is much danger of infection, and I should be inclined to look upon it as a rather unsavory procedure at best.

Heeding nature's call to evacuate the bowels, using paper of the quality above advised and keeping the anus and contiguous parts clean, by daily ablution, guards against chafing, filth, eczema, pruritus, fistula, piles, constipation and a host of other troubles, which are a frequent cause of many chronic constitutional diseases. It also prevents soiling of the linen, which to the sensitive and delicate-minded person is a source of great annoyance.

103 State Street.

THE RIGHTS AND DUTIES OF MEDICAL WITNESSES.

Read before the Mississippi Valley Medical Association, Nov. 21, 1894

BY HON. W. S. KERR.

MANSFIELD, OHIO.

The scope of this paper carries us to the gate of medical jurisprudence, and a little beyond, but I do not enter far its inviting domain. I deal largely with the rights of physicians and surgeons when subpœnaed as expert witnesses, and with the duties incumbent upon them as members of a learned and honored profession when they are called upon to testify as medical experts.

Medical witnesses have been extravagantly eulogized and unmeasurably condemned by courts and law writers. They merit both the eulogium and the condemnation. When they traffic in their evidence and appear as hired advocates the condemnation is just; when they appear as members of a great and enlightened profession, to aid in the administration of the law, and testify conscientiously, no tribute is undeserved.

The weight of medical expert evidence depends upon two qualities: 1, the skill, learning and experience of the witness; and 2, his honesty. The latter quality can be and should be alike in all; the former, in the nature of things, must vary and differ in degrees almost infinite in number. A physician whose practice has been confined to the small towns or the country could not be an Ericsson, nor one of three years' experience an Agnew. But all are admitted to testify to those things which they have studied and practiced, and the cause of truth and justice demands that according to their lights they should testify the truth, the whole truth and nothing but the truth. It should be recollected that not only the spirit but the form of the oath covers an opinion as well as facts testified to by expert witnesses. I do not want to lecture or read a homily on duty to the medical profession, but the following extracts from court opinions and eminent law writers will not only justify the few observations I have made, but will also show how your high standard has been lowered here and there along the line, by testimony calling out these criticisms. But that you may see how well the line has been held at other points, I quote alternately censure and praise, or, as earlier suggested, condemnation and eulogium.

A Scotch judge of that rugged integrity characteristic of his people, once said to a jury, referring to the medical evidence submitted on the trial: "The evidence is as unsatisfactory as any I have ever seen. It leaves on the mind the distressing impression that the science of medicine is simply the science of guessing and experts. Different doctors with equal confidence and equal dogmatism, express contrary opinions upon the same condition of things. I advise

the jury to exercise their common sense, throw overboard the medical opinion and go by the facts."

A Texas court once said: "The opinions of medical men are received with great respect and consideration, and properly so."

Judge Redfield in his treatise on the law of wills says: "Medical experts are beginning to be regarded much in the light of hired advocates, and their testimony nothing more than a studied argument in favor of the side for which they have been called. So uniformly has this proved true, in our limited experience, that it would excite scarcely less surprise to find an expert called by one side, testifying in any particular in favor of the other side, than to find counsel on either side arguing against their clients, in favor of their antagonists."

The Supreme Court of Pennsylvania says: "It is well settled that the knowledge and experience of medical experts is of great value."

An Ohio court said in reference to evidence in a murder case: "It would be but a farce to try such a question upon the strength of medical opinions, and to regard the weight of evidence always on the side which produced the greatest number."

The Supreme Court of North Carolina says: "The opinion of a well-instructed and experienced medical man upon a matter within the scope of his profession, and based on personal observations and knowledge, is and ought to be carefully considered and weighed by the jury in rendering their verdict."

The Illinois Supreme Court says: "These doctors were summoned by the contestants as 'experts' for the purpose of invalidating a will deliberately made by a man quite as competent as either of them to do such an act. The testimony is worth but little, and should be received by courts and juries with great caution. . . . It must be apparent to every one, but few wills could stand the test of the fanciful theories of dogmatic witnesses. . . . In such cases the opinions of neighbors, of men of good common sense, would be worth more than all the experts in the country."

The Ohio Supreme Court says: "Medical testimony is of too much importance to be disregarded."

Mr. Justice Grier, of the United States Supreme Court, said in delivering an opinion: "Experience has shown that opposite opinions of persons professing to be experts may be obtained to any amount."

The Georgia Supreme Court in speaking of medical evidence says: "It is entitled to great weight and consideration."

Judge Campbell, of the Michigan Supreme Court said: "The experience of courts with the testimony of experts has not been such as to impress them with the conviction that the scope of such proofs should be extended."

Thus has the shuttle of criticism, favorable and adverse, gone to and fro, weaving in the warp and woof of jurisprudence, the history of the medical witness. In the court-room he has won laurels for his profession—in the court-room he has brought reproach upon its fair name and fame. But it should be remembered that the medical expert is not the only expert whose testimony has been the subject of unfavorable judicial comment. Other experts appear quite as frequently as do physicians and surgeons, and when their evidence has been afflicted with the same vice it has been similarly characterized.

To avoid this just censure, opinions should be regarded as facts stated under the solemnity of an oath, and not as arguments to be urged in behalf of the side calling the witness. Opinions can not be measured in reference to their soundness, as facts can be squared to accord with the truth; there must be more latitude to give room for the difference in mental processes and impressions, but they have boundaries, or else there is no exactness in medical science. Exactly opposite opinions upon the same hypothesis proves one of two things—either that the witness lacks veracity or knowledge, or that the science is too elastic to be the measure of important rights.

Courts have been called upon to unfavorably criticise medical witnesses in respects other than in reference to opinion evidence. An investigation involving the condition and position of organs which can be examined physically and ocularly, ought not to differ materially in the result. The evidence of such examination and result presents facts and not opinions. A case illustrating this point, and in which I was engaged as counsel, came under my own observation. A woman sued a municipality for damages. She claimed to have prolapsus of the uterus from a fall upon a sidewalk. During the trial eight physicians examined her—four at one time and four at another, but all within an hour or two. Four testified that her condition, in respect to the matter complained of, was entirely normal.

The other four, and their examination had been contemporaneous, testified as follows: One said he found the position of the organ abnormal in that it leaned too far back; the second that it leaned too far to the right; the third that it leaned too far to the left, and the fourth, a Nestor in the profession, said he found it too straight up.

Another case tried recently in an Ohio court illustrates how physicians may fall short in making the test which more than any other would measure the capacity, which is always the desideratum in such investigations. An application was made for the appointment of a guardian for a man who, in the meridian of his powers, was one of the most celebrated physicians and surgeons in Ohio, upon the ground that he had become an imbecile, and was incapable of managing his business. Three of the most celebrated and able mental alienists in the State testified to his soundness of mind and his capacity to do business. Their investigations, although made with ample opportunity, were limited to conversations upon subjects relating to events long past or about items of property which he had possessed for years.

An order of the court was made to examine the alleged imbecile and such examination was made. Two very simple tests did more to solve the question of incapacity than all the expert evidence. He was told to add a column of five figures. The first three were added correctly but he could add no farther. He was next given $1.77 in change, consisting of seven or eight pieces and although he was able to designate the pieces, after considerable effort, he was *unable* to tell the aggregate. A man capacitated to do business should be able to add five figures and count a few pieces of money.

The cases in which the physician is called upon to aid the law are legion. If I were to undertake to enumerate them, the schedule itself would extend beyond the reasonable limits of a paper. Judicial

history shows that the physician as an expert witness, shines brightest or suffers the most serious discomfiture in cases of insanity and poisoning. Both of these afford a broad field for the exhibition of brilliant professional learning and acumen, and in legal investigations usually attracting large public interest and attention. They are fields worthy of any man's conquest even though he has to burnish his weapons by the light of a midnight lamp.

It should be recollected, also, that it is only in doubtful cases where the medical witness becomes an auxiliary to the law. He should not only be able to describe and classify the subject about which he testifies, according to the science of his profession, but he must bring his knowledge down to the comprehension of the twelve ordinary men who sit in the jury box. Because, however learned he is, if those whom he is to enlighten fail to comprehend him he has failed of the object and purpose of his being a witness. In measuring the duty of the medical witness it should be borne in mind that the majority of medico-legal questions are beyond the field, and lie far outside the every-day path, of most physicians. Nineteen-twentieths of their practice, medical and surgical, never relates to a matter which is the subject of litigation. It requires study, much study, to be a giant in any profession. Those who wait until the case presents itself, before fitting to try it or treat it, gather only withered leaves and faded flowers for their victor wreaths. That the daily practice of a doctor does not bring him into contact with the insane, is no reason why he should not possess, at least, the book learning of the subject. He may not be called once a year to treat a case of poisoning, yet he should know the various poisons, their peculiar effects and symptoms and be able to make the distinctions which science enables those to make who have tarried long enough at her fountains. It is to the advantage of a physician, if he never earned a dollar in this field, to be accomplished in legal medicine. It is a part of his profession and one who succeeds in a profession is one who explores with the lamp of industry its every branch and recess, and who comes to the discharge of its every duty with a mind capable of not alone comprehending, but of applying correctly its principles.

Necessity brought into requisition the medical expert. Frequently the courts would encounter questions of fact which all the knowledge of lawyers and judges and the common sense of juries could not solve satisfactorily. If those questions related to the human mind or body, who better could assist in making light that which was dark and mysterious, than the learned physician? So he was added as a spoke in the wheel of justice, or a wheel in the machinery of the law.

Mental alienation is a broad and inviting study. Men have spent their lives and become famous in the field and yet have not conquered half its difficulties nor solved half its mysteries. But this should not discourage the physician from devoting a little time, stolen from the daily grind, to its study. Like the bread cast upon the waters it will come back to bless him. Any doctor may be subpœnaed at any time to testify as a medical expert. Doctors as well as lawyers, and perhaps members of other professions, are judged by a standard fixed by a misconception and this misconception is deeply rooted in the common mind. In general understanding, both law and medicine are supposed to be made up of certain fixed and unvarying rules, which when applied will solve every question and dispute and determine every diagnosis and the treatment. It is further believed that every doctor and lawyer should be able at any moment to pick up one of these rules, as a carpenter would his measure, and settle the question or tell the disease at sight. We know that these are mistaken ideas. I am not competent to speak as to medicine, but as to law, it is not so much to know the law as to know where to find it. But in general estimation a doctor, when put on the stand, is expected to shed broad light upon any subject connected with medicine and if he is not able to do so or at least appears not to be able, not only his professional dignity but his professional standing and usefulness suffer.

Physicians are brought into court to testify as to the identity and ages of persons. The Tichborne case, as to the identity of the claimant, is one of the most interesting judicial records of the world. They are asked to give opinions as to probable survivorship where persons have died at near the same time and the course of inheritance depends upon the order of death. They are required to testify as to the age of puberty and to determine the most delicate and important questions in cases involving capacity to commit rape and paternity proceedings. In cases of criminal abortion, multitation, homicide, infanticide, defloration, wounds, impotency, sterility, pregnancy and in scores of other cases and upon scores of other questions, the physician is a valuable, an indispensable auxiliary in legal proceedings, civil and criminal.

A learned legal authority says: "The jury are to be enlightened in every possible way, and as they are not selected with a view to their qualifications to try the particular issues before them, but as men possessing the ordinary qualifications of mankind, when questions arise to be determined by them, involving an acquaintance with facts not coming within the ordinary range of human experience, skilled witnesses are permitted to enlighten them. The true rule is that when the subject to be investigated so far partakes of the nature of a science or trade as to require a previous course of study or habit in order to attain a knowledge of it, opinions of experts are admissible."

In legal controversies, turning upon, or involving the condition of mind as to soundness or unsoundness, the most important as well as the most difficult questions are largely determined by medical evidence. The physician is able, as no one else can, to physically and mentally measure the man. A man may not be able to manage his business affairs and still be responsible for crime. In criminal proceedings the supreme test is the ability to distinguish between right and wrong. This would seem a very simple and easy rule, but in its application to actual cases it calls into requisition all the acuteness and learning of both professions and in spite of all their acuteness and learning many an insane person has been executed for crime and many an offender has escaped just punishment upon the mistaken finding that he was insane. And it is no reflection upon law or medicine that this should be so. The most difficult problem with which courts and lawyers and doctors have to contend is that of real or alleged mental aberration in criminal cases and especially in capital cases. Many cases present the defense of

insane impulse. The person charged being concededly sane, immediately before and immediately after the commission of the act. Such was the shooting of Key by Sickles. Sickles was a Congressman and eminent in public life. Key had done him a great wrong. Upon sight of Key and under the impulse of his wrought up feelings the latter was shot dead in one of the public parks of the National Capital. The defense was that his condition of mind at the moment rendered him incapable of controlling the natural impulse to destroy the destroyer of his home. He was acquitted.

The Mary Harris case tried in Washington during the war was a celebrated case and presented clearly the difficulty, which medical experts encounter and, as well, the duty which they must discharge when a life, especially that of a woman, is at stake. The defendant shot a man to death in the Treasury Department and her defense was insane impulse. She was defended by most able counsel, among them being Senator Voorhees, then a Member of Congress. Eminent medical experts testified on both sides. While she was imprisoned, Mrs. Lincoln sent her a bouquet of rare flowers and within a year or two last past she was married to her senior counsel. She was acquitted upon the ground that at the moment of the shooting she was incapable of controlling the impulse under which she destroyed a human life.

A further illustration of this kind of evidence is in cases where, although the person charged with an offense is insane, it is claimed that either he still retained enough mental power to distinguish between right and wrong, or that the act was committed during a lucid interval. The question of responsibility may turn upon a brief interval of time.

Again, in civil cases, some of the most important, delicate and interesting questions, as to mental capacity, have arisen in contests of wills. The mental capacity is frequently complicated with undue or illegal influence and thus compounded make contests in which fame may be achieved by medical experts.

And still again, difficult questions as to mental capacity arise in proceedings to appoint guardians for persons alleged to be imbecile or insane. I believe medical authorities define an imbecile to be one idiotic but not born such. An old legal authority provided this test: "A person who has understanding enough to measure a yard of cloth, number twenty correctly or tell the days of the week is not an idiot in the eyes of the law." But in these days of asylums for the feeble-minded, institutions in which idiots are taught to do these things and many more, this test of responsibility or capacity would hardly be received as conclusive. And in all such cases judges, calling to their aid medical gentlemen as expert witnesses, must unravel the tangles.

Cases in criminal poisoning usually have about them the interest of mystery. In a great majority of these cases the evidence to convict or exculpate must come from the medical profession. The most important witness is usually the attending physician, and very much depends on how carefully he has noted and how clearly he can describe the symptoms. The chemist can analyze in search of the poison, but only the doctor can preserve the symptoms and appearance.

Doctors are frequently called into court, not simply as witnesses to give an opinion but to testify to technical facts, the knowledge of which was acquired by them in the confidential capacity of attending as a family physician and in aid of or against persons thus employing them. Under the common law the communications made by patients to their physicians were not privileged. Most of the States by statute have provided that such communications shall not be given in evidence if the patient objects. The privilege is that of the patient and not of the doctor. But in order to exclude them they must be made about something necessary to be disclosed in order to prescribe the remedy or treatment.

I have reserved for the last, a brief reference to the law regarding the right of medical experts to receive or demand extra compensation before testifying. If they are subpœnaed to testify to facts which came under their personal observation, their rights are not different from those of any other witness. They are bound to obey the summons of the court and if they neglect to do so, they would be subject to punishment as for contempt of court. I think, as a general proposition and in the first instance, physicians are obliged to appear in court when subpœnaed and paid or offered the ordinary fee, and that their right to raise the question does not present itself until they are propounded questions calling for opinion or scientific evidence and then the question arises hereinafter discussed. This may seem to fall short of what an expert ought to be able to demand before going to court, but the reason of the proposition lies in the difficulty of determining beforehand the kind of evidence to be elicited. If it was conceded at the outset that opinion or expert evidence alone was to be sought, then I think the right to demand extra compensation would exist before answering the subpœna or at least before going upon the stand.

Some of the States by statutory provision, have settled this question. North Carolina as follows: "Experts when compelled to attend and testify shall be allowed such compensation and mileage as the court may, in its discretion, order."

Iowa as follows: "Witness called to testify only to an opinion founded on special study or experience in any branch of science or make scientific or professional examination, and state the result thereof, shall receive additional compensation, to be fixed by the court, with reference to the value of time employed and the degree of learning or skill required."

Rhode Island as follows: "In addition to the fees above provided, witnesses summoned and testifying as experts in behalf of the State before any justice of the Supreme Court, trial justice or coroner, may be allowed and paid such sum as such justice of the Supreme Court, trial justice, or coroner may deem just and reasonable; provided, that the allowance so made by any trial justice or coroner, shall be subject to the approval of a justice of the Supreme Court."

Indiana has settled the matter the other way and as follows: "A witness who is an expert in any art, science, trade, profession or mystery may be compelled to appear and testify to an opinion as such expert, in relation to any matter, whenever such opinion is material evidence relevant to any issue on trial before court or jury, without payment or tender of compensation other than the per diem and mileage allowed by law to witnesses, under the same rules and regulations by which he can be made to appear

and testify to his knowledge of facts relevant to the same issue."

In States where no express provision has been enacted the question is still an open one, unless some court of authority has fixed a rule. Some of them have, as hereinafter stated. No expert is required, whatever the rule is, to make examinations and prepare to testify in behalf to a party to a suit without such compensation as may be agreed upon. He might be required to do so if appointed by a court as a commission or committee in cases where the court had authority to make such appointment. He can not be compelled to attend the progress of a trial in order to enable him or qualify him to give opinions as to questions involved.

The reasons are all in favor of extra compensation. Authoritative writers on medical jurisprudence have set them forth as follows: I quote from Ordronaux: "It is evident that the skill and professional experience of a man are so far his individual capital and property that he can not be compelled to bestow it gratuitously upon any party. Neither the public, any more than a private person, have a right to extort services from him, in the line of his profession, without adequate compensation. On the witness stand, precisely as in his office, his opinion can be given or withheld at pleasure; for a skilled witness can not be compelled to give an opinion, nor committed for contempt, if he refuse to do so."

I quote next from Beck's "Medical Jurisprudence:" "If the duties on which I have enlarged are important to the community, in promoting the proper administration of justice, ought not the individuals engaged in them to receive adequate compensation? I advert to this not only because it is just in principle, but because it would remove all imputation of volunteering in criminal cases; no one can refuse being a witness when legally summoned; every one, I presume, may decline to dissection of a dead body, or the chemic examination of a suspected fluid and yet there is not, I believe, an individual attending on any of our courts, who is not paid for his time and services, with the exception of such as are engaged in these investigations."

These authors are physicians and it may be reasonable to subtract a little from their enthusiasm, but notwithstanding, they state cogently reasons which ought to determine the rule. A good deal of learning has been expended in discussing whether the rule should rest upon the theory than the time of an expert was more valuable than that of an ordinary witness, or that upon the theory that his opinions, skill and experience are his property of which he can not be deprived without adequate compensation. The latter theory has prevailed universally where extra compensation has been authorized and it is the only tenable basis.

In a Massachusetts Federal Court in a criminal case, the district attorney moved to attach a witness as for contempt, who had failed to appear when subpœnaed as an interpreter. It is not an exact parallel but the reason is the same. The court declined to issue the writ and in the refusal is reported as saying: "A similar question has heretofore arisen and I have declined to issue process to assist in such cases. When a person has knowledge of any fact pertinent to the issue to be tried, he may be compelled to attend as a witness. . . . . But to compel a person to attend because he is accomplished in a particular science, art, or profession would subject the same individual to be called upon in every cause in which any question in his department of knowledge is to be solved. Thus the most eminent physician might be compelled, merely for the ordinary witness fee, to attend from the remotest part of the district, and give his opinion in every trial in which a medical question should arise. This is so unreasonable that nothing but necessity would justify it."

One of the Federal Circuit Courts of this State (Arkansas) has decided the question in favor of the right to demand extra compensation before testifying to matters of expert knowledge. The court said: "The skill and professional experience of a man are so far his individual capital and property that he can not be compelled to bestow them gratuitously upon any party."

The Court of Appeals of Texas held the opposite rule upon the peculiar facts of the case. A physician was placed upon the witness stand and testified without objection to the facts which had come under his personal observation; when it came to his opinion as to the cause of the man's death he declined to answer without other compensation than the ordinary witness fee. The trial court sustained the physician, but the Court of Appeals held that inasmuch as he had already made the *post-mortem* examination he should give his opinion.

The Supreme Court of Indiana, before the passage of the statute denying the right to extra compensation, decided the question the other way, and in the opinion used the following language: "When a physician testifies as an expert giving his opinion he is performing a strictly professional service. So does the lawyer, when he performs any services in a case. The position of a medical witness testifying as an expert, is much more like that of a lawyer than that of an ordinary witness testifying to facts. The purpose of his service is not to prove facts in the case, but to aid the court of jury in arriving at a proper conclusion from facts otherwise proved."

The English rule is well settled in favor of extra compensation. Justice Maule in one case saying: "There is a distinction between the case of a man who sees a fact, and is called to prove it in court of law, and a man who is selected by a party to give his opinion on a matter on which he is peculiarly conversant from the nature of his employment in life. The former is bound as a matter of public duty to speak to a fact which appears to have fallen within his own knowledge. The latter is under no such obligation; there is no such necessity for his evidence and the party who selects him must pay him.

Alabama has denied the right; other States may have done so, but the cases have not come under my observation. Upon the reason of the thing one wonders why courts have divided upon the question. An expert is one who by study and practice, skill and experience has acquired peculiar knowledge of a certain subject or matter. He arrives at his knowledge by a process akin to that through which property is accumulated, and it is as valuable as property. The latter receives the protection of constitutional provision, and is guarded as sacredly as life and liberty. Yet knowledge, by these adverse decisions, is treated as commons upon which judicial stock may graze at pleasure.

The evidence of an expert should be compensated for commensurate with its value. In criminal cases

the amount should be fixed by the court, in civil by agreement between the expert and the party calling him. The medical expert should never have his opinions for sale. Fidelity to his profession and its great principles should be his pole star. Medicine is the greatest of the worldly professions. It deals with life and health, the dearest possessions of this sphere. For years, if not in substantial honors yet in general estimation, it has been honored above all. Its members have ornamented the most exalted stations, and in its daily work, without herald or drum beat it modestly performs its great task in life. I am highly honored by being admitted, for this brief time, within the precincts of your order.

ORIGINAL INVESTIGATIONS ON THE NATURAL HISTORY, (SYMPTOMS AND PATHOLOGY) OF YELLOW FEVER. 1854–1894.

BY JOSEPH JONES, M.D., LL.D.
NEW ORLEANS, LA.

(*Continued from page 10.*)

CHAPTER III.

Algid Form:—"As a general rule, the vascular action was much below par in the algid form. I have observed cases in which the radial pulse was imperceptible for days; more commonly, however, the pulse at the worst, though excessively feeble, was not altogether obstructed, and by a delicate and practiced finger it could be felt and counted. Its rate was variable, more commonly below than above 100 per minute. I have noted it at 80, very fine, thready, weak and readily extinguishable, and at almost all intermediate rates to 120, with much the same character. The cardiac action was very feeble. I have not observed any diminution in the relative proportions of the first and second sounds of the heart; they were often diminished in tone and force, but preserved their relative characters of duration and intensity. I have not observed any want of accordance between the cardiac action and that of the arteries in the algid form, such as I shall have to speak of subsequently when treating of some of the other forms. In general, in this form the radial pulse could be taken as a measure of the cardiac action. When the pulse was feeble, the heart was likewise proportionately so. There was no exception to this rule, as my experience of the cases goes (p. 260).

"Sthenic Form:—This class of cases generally exhibits from the outset a remarkable elevation of temperature. It is common to find an increase of 3 degrees, 4 degrees or even 5 degrees Fah., and in some instances an increase of nearly 7 degrees has been observed. We have noted the thermometer in the axilla at 102 degrees, 103 degrees, 104 degrees, and in some instances it nearly touched 105 degrees Fah. This limit I have not actually seen reached in any case, though the mercury in some instances rose considerably above 104 degrees. (The instrument employed, an English one of the kind commonly used for hospital purposes, did not admit of more minute or accurate reading than by whole degrees (p. 266.)

"Rate of the Pulse in the Sthenic Cases:—The pulse, though often full and expanded, and occasionally hard and thrilling in this form, commonly ranges but little above 100 or 110 beats per minute. I have noted it in some cases at 112, 114, and in very rare instances so high as 120. In general, when the pulse runs above 115, the case passes into a low and typhoid state; on the other hand, I have seen well-marked pyrexia with a pulse at 60. It has fallen to 100, 90, 80, and even 70, and in two instances to 60, without very well marked diminution of the other pyrexial symptoms; in these latter instances it has always retained its force and expansion. Thus we not unfrequently have the combination of a pulse at 70, 80 or 90, or in general terms, under 100, while the thermometer in the axilla shows a persistent temperature above 100 degrees Fah.

"The following combinations of pulse rate and temperature were observed in the course of my investigations into the Lisbon epidemic; they are selected to show the absence of harmony and the frequent contrasts presented by the two sets of phenomena:

TABLE OF PULSE RATE AND TEMPERATURE.
(Thermometer in axilla.)

Case.	Pulse.	Temperature.
1	113 per minute.	102.0° Fah.
2	100 " "	100.0 "
3	112 full.	104.0 "
4	104 "	103.0 "
5	92 "	101.0 "
6	100 "	103.5 "
7	104 "	103.0 "
8	100 "	104.5 "
9	84 "	99.0 "
10	70 "	100.5 "

"From this table it will be seen that the highest pulse rate and the highest temperature did not correspond. On the contrary, the highest pulse at 113 had only a moderate degree of elevation of the thermometer, 102 degrees, while the pulse at 100 gave the highest temperature, and the lowest pulse rate, that at 70 beats per minute, was attended by coloration and an elevation of the thermometer to 100.5 degrees. There was, therefore, no constant uniformity of relation between the two sets of phenomena (pp. 270, 271).

Hemorrhagic Form:—I can testify to the statement, that in this form the yellow coloration constantly appears during the primary pyrexial state and while it is at its height, with the pulse over 100, and the thermometer in the axilla registering 101 degrees, 102 degrees, or even 104 degrees, the thermometer indicates generally a less considerable elevation of temperature in the hemorrhagic than in the sthenic cases. I have observed the pulse at 92 degrees and the thermometer at 101 degrees Fah. in a most characteristic well-marked hemorrhagic case. The pulse subsequently rose to 100, and 104 degrees in the same case, with elevations of the thermometer to 103.5 degrees and 103 degrees respectively, coloration of the skin being present to a marked extent. I do not, however, think that the temperature is generally so high in this class of cases. I believe that as a general rule the temperature in the hemorrhagic cases is from 2 degrees Fah. under that in the sthenic form. The transition from the sthenic to the hemorrhagic form is sometimes marked by a diminution in the rate and volume of the pulse, and a lowering of the thermometer; the patient's strength sinks rapidly at the same time, and in some cases a clammy sweat bedews the face for one or two days. This state of things is followed by, as it were, an explosive and universal lesion in the vascular system, leading to profuse hemorrhages at all available points of the cutaneous and mucous surfaces (pp. 274, 275).

"State of the Pulse:—I have nothing to record of a characteristic or peculiar kind in reference to the pulse. It is commonly less frequent than in the sthenic form, but has perhaps more of fullness and expansion, while its force is less. I have carefully noted the condition of the pulse in numerous cases, and in no one instance have I met with anything approaching to the dicrotous character either before or during the height of the hemorrhagic invasion; and that it was a very rare condition in the Lisbon epidemic is evidenced by the circumstance that in the large experience of Dr. M. Figueira, and of the physicians to the Desturo Hospital, it was presented but once; this observer could call to mind but one single case in which the pulse presented a well-marked dicrotous beat.

"The rate of the pulse is variable; it is commonly over rather than under, 100 per minute. It is most generally full, soft and responsive, and wanting in force and rebound. These, it will be observed are not very positive characters; but in such were presented in the great majority of cases observed by me.

"The pyrexial state is evidenced more decidedly by the state of the thermometer, which is usually over 100 degrees Fah. There is much variety in this respect; but what is important, and what can be positively stated, is that the hemorrhages occur during the pyrexial period, and with elevation of the pulse, and the thermometer above the standard. Thus we have seen them presented with characteristic force and intensity, while the pulse was at 100, and the thermometer in the axilla stood at 103.5 degrees; but this latter is unquestionably an exceptional elevation for the form of the disease now under consideration (pp. 376–377)."

My own investigations on the variations of temperature in different animals and in man under the action of various poisons and conditions of health and disease, and of climate, starvation and repletion, were begun in 1854, and have been continued without interruption up to the present time. The opportunities of recording observations on the pulse, respiration and temperature in various diseases were greatly enlarged during the recent Civil War (1861–1865). In 1870, a special monograph relating to yellow fever was transmitted to the AMERICAN MEDICAL ASSOCIATION, and in 1873 I endeavored to excite various observers in those cities in which yellow fever was prevailing, as in New Orleans, Memphis, Shreveport and Pensacola, to record critical observations on the changes of the pulse, respiration and temperature of the disease. The results of the portion of these labors which relate more especially to yellow fever will be found in the present chapter.

The temperature according to Schmidtlein,[38] is highest in the first few days of yellow fever, and very often reaches a height of from 40 to 41 degrees C., (104 to 105.8 degrees F.) Very frequently with slight evening exacerbations. From the fourth to the fifth day the temperature slowly falls, and sinks down to normal or even below this. In cases which end fatally, it rises again toward the end, some 2 degrees C. (3.6 degrees F.) or even more.

According to Dr. William N. Nixon,[39] during the recent fatal epidemic of yellow fever in Buenos Ayres, 1870–1871, a high range of temperature was rapidly attained, and maintained with the exception of differences of portions of a degree between the night and morning temperature, the night returns being slightly higher than those of the preceding morning; the decline was quite gradual.

I have refrained from citing the general observations of numerous writers, as Rush, Louis and a host of others, as to the presence of heat of surface in yellow fever, for they possess but little value for purposes of critical diagnosis, and confer little or no power of distinguishing between this disease and several other forms of malarial fever. We have sought rather to record the actual observations with the thermometer. A similar course will be pursued with reference to the changes of the pulse in this disease.

The fullest and most reliable observations upon the pulse in yellow fever, with which we are acquainted, are those given by Daniel Blair, in his account of the last yellow fever epidemic of British Guiana, 3d edition, London, 1852. According to this accurate observer: "The pulse was rarely very quick during any period of the disease. It was highest in the first stage, and gradually declined in frequency. Before death it generally became quicker and smaller, and when much fluid ejection occurred, it became extinct at wrist many hours before death. During convalescence the pulse was uniformly slow when no complication existed. The pulse was quickest in the cerebral variety. In some cases when the disease determined to the intestines, the pulse became startlingly slow, even on the second day of the disease; thus in Mr. Mackae's case it was 48; he recovered. In Case 2,895 of Seaman's Hospital, the pulse on the sixth day of fever was 24. The insidious nature of some of the attacks (when the seat of the malady was the intestinal, urinary or pulmonary apparatus) the perfect care of the patient, the external air of good health, and the *solemnity of the pulse* in such cases, frequently inspired the practitioner with a kind of awe and horror of the new, treacherous and remorseless malady.

In some cases of yellow fever, it seemed as if the poison acted directly, and at once, as a sedative on the heart; and in some cases there seemed a sudden and temporary excitability of it, which must have been favorable to the production of fatal local congestions.

TABLE SHOWING THE AVERAGE PULSE ON DIFFERENT DAYS OF THE DISEASE WITH THE NUMBER OF OBSERVATIONS FROM WHICH EACH AVERAGE IS OBTAINED.

No. of Observations.	Day of Disease.	Average Pulse.
121	1	97.40
338	2	90.80
406	3	83.53
388	4	80.44
311	5	78.56
206	6	78.74
125	7	78.78
71	8	75.62
46	9	75.76
29	10	77.58
16	11	76.37
7	12	76.00
5	13	79.20

Remarkable differences in the pulse are sometimes observed at different periods of the day.

1. Examples of rising in frequency:

Case 5,211. Morning, pulse 84; afternoon, pulse 126.

Case 828. Morning, pulse 80; afternoon, pulse 108.

Case 1,318. Morning of fifth day, pulse 70; afternoon, pulse 100.

Case 986. Morning of third day, pulse 72; afternoon, pulse 120.

Case 1,506. Morning of third day, pulse 52; afternoon pulse 86.

[38] On the Temperature in Diseases, by Dr. C. A. Wunderlich, p. 405.
[39] London Medical Times and Gazetteer. 1871.

Case 2,053. Morning, pulse 100; afternoon of fourth day, pulse 150.
Case 2,215. Morning, pulse 112; afternoon of fourth day, pulse 156.
Case 2,215. Morning, pulse 92; afternoon of eighth day, pulse 134.

2. Examples of falling in frequency:

Case 583. Morning, pulse 108; afternoon, pulse 54.
Case 985. Morning, pulse 100; afternoon, pulse 72.
Case 986. Morning of second day, pulse 120; afternoon, pulse 108.
Case 1,137. Morning, pulse 96; afternoon, pulse 64.
Case 1,277. Morning of second day, pulse 100; afternoon, pulse 64.
Case 1,278. Morning of fifth day, pulse 120; afternoon, pulse 80.

3. Examples of the falling and rising suddenly:

Case 986. On second day falls from 120 to 108. On third day rises to 120 and again falls to 80.
Case 1,318. On fifth day rises from 70 to 100; falls to 80 on morning of sixth, and to 50 in evening.
Case 2,215. On fourth day rises from 112 to 156, and on eighth from 92 to 134.

The pulse is often observed to rise or fall suddenly in frequency shortly before death.

1. Examples of its rising:

Case 381. On day of death, rises from 68 to 80.
Case 656. On day of death, rises from 58 to 72.
Case 2,080. On day of death, rises from 88 to 120.
Case 2,601. From 80 day before death to 110 on day of death.
Case 2,609. On day of death rises from 78 to 100.
Case 2,680. On day of death rises from 84 to 120.
Case 2,712. From 80 day before death to 124.
Case 2,775. From 100 day before death to 134. From 80 to 96 and 116 on day of death.

2. Examples of its falling:

Case 367. From 130 to 98 day before death, and again rises to 120.
Case 656. From 84 to 54.

Comparison of adult pulses in convalescence from virulent yellow fever with adult pulses in cases convalescent from inflammatory diseases where no febrile action had existed. Made in Seaman's Hospital Sept. 10, 1843.

YELLOW FEVER.

Name.	Pulse.	
Fletcher	50	Irregular
McLaren	56	Regular
Wilson	52	Regular
McTammany	58	Irregular
Allen	58	Regular
Total,	274	
Average pulse	54.4	

INFLAMMATORY CASES.

Name.	Pulse.	Previous Diseases.
Pease	115	Bronchitis, emphysema
Harding	102	Paracentitis
Hall	102	Asthma, empyema
Power	90	Paracentitis, cough
Tynas	100	Suspected tubercular infiltration in right lung
Total,	509	
Average pulse	101.8	

ACCIDENTS AND AILMENTS WITHOUT FEVER.

Name.	Pulse.	Previous Ailments.
Purcell	76	Muscular pain
Sinclair	84	Eccentricity of conduct
Martin	84	Paralysis
Bolan	84	Ankylosis of knee joint
Johnson	84	
Total,	412	
Average pulse	82.4	

NOTE.—It is to be observed that these remarkable differences in the frequency of the pulse are rarely accompanied by corresponding febrile exacerbations. Although the remarkable slowness of the pulse in convalescence from yellow fever was early observed, the following limited trial for comparison by me on the subject is believed the only one which has been made. The fact was observed before the experiment was instituted.

Dr. Davy remarks upon these observations in his notes to the work of Dr. Blair: "Slowness of pulse in connection with certain diseases of the abdominal viscera—not of an inflammatory kind, is worthy of remark. Jaundice is a striking instance of this kind; less marked ones are met with in cases of functional derangement of the primæ viæ, though not without exceptions." . . "Unusual slowness of pulse was often observed in the yellow fever of Barbadoes, and commonly accompanied with undue coolness of skin, especially in the extremities; it was a remarkable feature of the disease after its first invasion,—the time varying in different cases. The author's private observations on this symptom appear to me to be very valuable (pp. 74-77). Recent observations in New Orleans have confirmed the accuracy of Dr. Blair's statement with reference to the slowness of the pulse in yellow fever—as will be seen by an examination of the following table—which includes the labor of several observers working wholly independent of each other.

Dr. Porcher of Charleston, Dr. Charles Faget,[40] Dr. Just Finaste, Thomas Layton,[41] Prof. Samuel Logan,[42] Dr. Miner,[43] of New Orleans, Drs. Saunders[44] and Mitchell[45] of Memphis, have recorded valuable observations on the changes of the temperature, pulse and respiration in yellow fever.

Dr. Charles Faget,[46] of New Orleans, who is well known to the profession in this country and in Europe, for the accuracy of his observations upon disease and for the depth and extent of his learning, has produced one of the most striking and valuable articles on the relations of the temperature and pulse in yellow fever.

Dr. Faget bases his conclusions on thirty-eight tables of cases, recorded during the yellow fever epidemic of 1870 in New Orleans, furnished as follows: Sixteen by Dr. Touatre, Physician to the French Asylum; some from the asylum, the rest from the city; seven by Professor Bemiss, all from the Charity Hospital, thermometer in the axilla; three by Dr. Layton, and twelve by himself; the last fifteen from the very focus of the disease. Drs. Layton, Touatre and Faget took the temperature in the patient's mouth, placing the thermometer between the gums and cheek. The main object of this article as announced by its author "is to prove that yellow fever is a fever of a *continuous* type, and that it takes its place as a *specific* fever, distinct from all other forms, and is especially to be distinguished from the *malarial species*."

Dr. Faget thus places himself in accord with a host of writers on yellow fever, from the time of Lining, of Charlestown, S. C., in 1754, to the present moment, including the names of Bally, Louis, Blair, Bennet

[40] New Orleans Medical and Surgical Journal, 1873.
[41] Reply to the Inquiries of Prof. Jos. Jones, of New Orleans, relating to the Temperature of Yellow Fever.—New Orleans Medical and Surgical Journal, March, 1874, p. 695.
[42] Bedside Notes on the Pulse, Temperature and Urine in Cases of Yellow Fever, Observed at Pensacola Navy-Yard, in the fall of 1874.—New Orleans Medical and Surgical Journal, May, 1875, p. 779.
[43] Yellow Fever Epidemic of Memphis, Tennessee, 1873, as observed by R. LeMenuier, M.D., N. O. J. M., 1874, pp. 536, 656.
[44] Observations on the Yellow Fever Epidemic of 1873, at Memphis, Tenn. By D. D. Saunders, M.D. Prepared in response to the request and inquiries of Prof. Joseph Jones, M.D., of New Orleans.—New Orleans Medical and Surgical Journal, May, 1874, p. 791.
[45] Yellow Fever in Memphis in 1873. By R. W. Mitchell, M.D., of Memphis, Tenn.—Rich. and Louisville Med. Jour., May, 1874.
[46] Type and Specific Character of True Yellow Fever, as shown by Observations taken with the Assistance of the Thermometer, Science and Watch. By J. C. Faget, Member of the Société Médicale d' Observation. New Orleans Medical and Surgical Journal, 1873. The Type and Specificity of Yellow Fever, established with the aid of the Watch and Thermometer. By Dr. J. C. Faget of the Faculty of Paris. New Orleans and Paris, 1875.

Dowler and John Harrison, of New Orleans; and in opposition to the school founded by Bancroft and ably supported by Chervin and his latter day followers who confounded true yellow fever with certain forms of malarial fever.

(To be continued.)

THE DISEASE OF INEBRIETY.

ITS STUDY FROM THE STANDPOINT OF THE EXPERIENCE OF AMERICAN PHYSICIANS OF EMINENCE WHO HAVE WORKED IN THIS FIELD OF RESEARCH.

BY EDWARD C. MANN, M.D.
NEW YORK CITY.

(Continued from page 21.)

ALCOHOLIC IDIOSYNCRASY.

Another class possesses an organization which may be termed an alcoholic idiosyncrasy; with them the latent desire for stimulants, if indulged, soon leads to habits of intemperance and eventually to a morbid appetite, which has all the characteristics of a diseased condition of the system, which the patient, unassisted, is powerless to relieve—since the weakness of will that led to the disease obstructs its removal. It might be well to divide inebriates into two other classes; the constant or daily, and the periodical drinkers. Of these two classes the constant drinkers are the most susceptible of treatment and cure. We find by a reference to the annual reports of the New York State Inebriate Asylum for the years, 1870, 1871 and 1872 the whole number of patients admitted during that time was 713. Of this number 402 were constant, and 311 periodical drinkers. Out of the whole number the hereditary taint, immediate or remote, existed in 347 cases, being nearly 50 per cent. As the two diseases, inebriety and insanity are closely connected in both their manifestations and results, nearly the same remedies, restraint and discipline are applicable to both conditions. Although inebriety is temporary insanity, those suffering from mania for drink should not be confined with the actually insane, for it would have an injurious effect, nor on medical and dietetic grounds is it advisable.

Prof. Austin Flint says: "Dipsomania is to be treated as a form of mental derangement." Dr. Joseph Parrish says: "Medical observations and diagnosis have determined that the diseased portion of the mind in cases of intemperance is the will, not the intellect. The inebriate knows, but is impotent to perform. For a better understanding of the requisite discipline demanded in the way of remedial restraint of inebriates, we notice some of the results of chronic inebriation, affecting more particularly the brain and nervous system—which in addition to the necessary medical treatment, necessitates strict discipline for the successful management of these cases. We have alcoholic epilepsy, alcoholic mania, delirium tremens, tremors, hallucinations, insomnia, vertigo, mental and muscular debility, impairment of vision, mental depression, paralysis, a partial or total loss of self-respect and a departure of the power of self-control."

We are warranted in repeating, even with more emphasis, the principles formulated by this Association (the American Association for the Study and Cure of Inebriety) at their first meeting in 1870, substantially as follows:

1. Intemperance is a disease.

2. Its primary cause is a constitutional susceptibility to the alcoholic impression.

3. The constitutional tendency may be inherited or acquired.

4. It is curable in the same sense that other diseases are.

It is now well established that inebriety is a formidable disease that may be inherited or acquired; and a disease that is closely connected with insanity in its manifestations and results, and to a certain extent in the means to be used for its removal and cure.

MEDICAL TREATMENT.

The peculiar medical treatment to be pursued must be left wholly in the hands of the officer in charge, who should be an experienced physician, especially adapted for the position. He should be well informed in all matters pertaining to the disease, the treatment of which should be based upon a correct pathologic condition of the poisoning effects of alcohol on the different tissues and organs of the body, with a proper knowledge of the peculiar method to be pursued in individual cases, as well as a thorough understanding of the general practice essential for the cure of all inebriates. The practice in some institutions of letting down patients by degrees in the use of stimulants is decidedly impolitic, unless the patient is in a much debilitated condition and likely to sink. The general rule should be, cut off at once and altogether the use of alcohol in every form—more can be done by diet and medicine than can be obtained by a compromise in the moderate use of stimulants for a limited period. It is a mistake to suppose that any special danger arises from stopping the accustomed stimulus. Alcohol is a poison and we should discontinue its use at once as it can be done with safety and perfect impunity, except in very rare cases.

To secure all the benefits to be derived from medical treatment, we should have institutions for the reception of inebriates where total abstinence can be rigidly, but judiciously enforced for a sufficient length of time to test the curative powers of absolute restraint from all intoxicating drinks. When the craving for stimulants is irresistible, it is useless to make an attempt to reclaim and cure the drunkard unless the detention is compulsory, and there is complete restraint from all spirituous or alcoholic stimulus.

Dr. Francis Edward Anstie says: "There is very little chance except forced abstinence, tonics, nutritive treatment and the regulation of the diet." Prof. Austin Flint in speaking of the treatment says: "The successful treatment is rarely practicable except by means of institutions, in which the patient is under the same restrictions as in insane asylums." The restraint imposed by the institution and the self-restraint accepted on the part of the patient, are remedial agents from the moment he enters, growing stronger and more effective day by day, until finally he finds total abstinence not only possible but permanent. The hygienic and sanitary measures consist in total abstinence from all alcoholic beverages; good nourishing diet; well ventilated rooms; pure bracing air; mental rest and proper bodily exercise. The patient should be required to be prompt at his attendance at meals, and to observe regular hours for rising and retiring and to obey with military regularity and promptness all requirements that may be

conducive to health, and the formation of new and better habits.

LENGTH OF TIME NECESSARY TO A CURE.

"The length of time necessary to cure inebriation is a very important consideration. A habit covering five, ten or fifteen years can not be expected to be permanently eradicated in a week or a month. The fact that the excessive use of stimulants for a long period of time has caused a radical change, physically, mentally and morally, is not only the strongest proof that its entire absence is necessary, but also that it requires a liberal allowance of time to effect a return to a normal condition. The length of time necessary to the cure of inebriation will depend upon the duration of the disease and the amount of organic lesion which exists. The shortest period of continuous restraint, as a general rule, should not be less than six months in the most hopeful cases; and extending from one to two years with the less hopeful and more especially for the class of periodical drinkers, and those with an hereditary tendency."

Dr. Geo. M. Beard in a paper entitled, "Are Inebriates Automatons?" said: "As an illustration of the involuntary life in disease, inebriety is one of the most interesting, as well as most difficult to comprehend. So long as a man is merely a drunkard, or a victim of the vice of drinking to excess, he has it in his power to reform if he has a good endowment of will and can keep out of temptation. But in the disease of inebriety the sufferer has little or no more volitional control over his drinking symptoms than has a sufferer from malaria, or from sick headache or from hay-fever. All the influence he can exert over himself in the way of reform must be *indirect*—through the avoidance of the exciting causes whatever they may be; and in order to do this, it is oftentimes necessary for him to have the aid of outside parties. When his environment is bad, when temptation is before him, he has, practically, no will in this special relation, but is as truly an automaton as a patient in the horrors of tic-douloureux or smallpox, subject to the varying influence of weather, of wind, of diet, of medication, of mental influence in every form; the inebriate is, indeed, not himself but somebody else. In perfect health, man is a bundle of reflex actions, with a very small margin of volitional life, but in a disease of the nervous system, like inebriety, this small margin of what we call volition is swept away, and the man is an automaton so long as he is in the face of environment that excites the morbid desire and has no other method of exhibiting his manhood than by changing his environment, which he is oftentimes powerless to do without external aid; for the very effect of the environment is to take away the power of changing it, which is the very thing desired. Periodical inebriates, in the interval of their attacks, often put themselves under the charge of some friend, or enter an asylum, or leave the vicinity of temptation and this infinitesimal fraction is all that is left of their volition."

Dr. T. D. Crothers in writing on the "Etiology of Inebriety," says: "In discussing the causes of inebriety, we start from the broadest theory of cerebral defect as manifest in perversions of the nutritive functions and enfeebled will-power. Facts and experience clearly indicate that inebriety, from whatever cause, is a disease or stage of disease, either primary or secondary, as well marked as fever and chills in malaria, or anesthesia and immobility in paralysis. The craving for liquor and the morbid impulse to commit crime are the same; the act is repelling to the higher reason in both, but the perverted will-power and function assumes control, and maintains it through the weakened organism. The degenerative processes often remain dormant for a long time, then on the application of its peculiar stimuli suddenly spring into activity. The brain and physical system may give no evidence of defect or derangement, or if any, only momentary, and yet the malady be far advanced. In general terms, this disease is always dependent on the dynamic and physical changes in the molecular neurine of the nerve centers. It may arise from causes acting on the functional energy, or from general systemic conditions which may be exciting or predisposing. The exciting causes produce changes of structure or function which constitute disease, or awaken latent tendencies to it. The predisposing causes induce such a state of the system or some part of it as shall dispose to certain kinds of malady and weaken the power of resisting morbific agencies. Inebriety can always be referred back to some special condition, circumstance, event or alteration of structure or function which, although it may not be clearly understood, constitutes the starting point of the disorder.

"In an examination of a large number of confirmed inebriates at the Albany Penitentiary, this statement was confirmed in nearly every case. A study of the particular causes indicate three classes or groups:

"1. Inherited causes, direct or indirect, including the diathesis or cachexia.

"2. Such general causes as produce inebriety in common with other insanities.

"3. Conditions and circumstances which particularly favor the development of inebriety. The strumous diathesis and cachexia, a syphilitic diathesis and cachexia, an arthritic diathesis and cachexia all tend to produce inebriety.

"The second group, called general causes, are those which frequently produce inebriety in common with other insanities. Of these, mechanical injuries seem prominent, such as injuries or concussions of the brain and the spinal cord and consequent alterations of nutrition. Blows on the head are not infrequently followed by violent paroxysmal drunkenness; railroad accidents, where the concussion and surprise are sudden and overwhelming, causing intense reaction on the nervous system (producing insignificant physical lesions), often develop inebriety and mania. A chaplain in the late war, injured in the leg by a shell (unexpectedly) although but a simple flesh wound, was several months in the hospital before recovery. From this time he became an uncontrollable drunkard and eventually died. A prominent physician was precipitated from his carriage falling on the head, and received a flesh wound of a minor character. Very soon after, inebriety was developed and he ended his life a raving maniac in an asylum. This rule in many cases indicates that injuries of the brain, spinal cord or any part involving numerous nerve trunks may end in cerebral disturbance of which drunkenness is a very common stage of the lesion. The injury being small in comparison to the mental disturbance which follows.

"Peripheral irritation or reflex excitability has been noticed as a common cause in many cases. A

London physician describes two cases where tapeworms excited inebriety and mental hallucinations, which disappeared on their expulsion. Several instances are on record where the use of pessaries in prolapsus uteri, and the prolapsus alone, has been the cause of mental disturbances of which drunkenness was the most prominent symptom. The irritation from prolonged lactation, or in dysmenorrhea, amenorrhea, nymphomania and fundamental disturbances of the genital organs, are frequently the beginnings, and in many cases the active causes of the disease. Numerous cases of puerperal insanity, preceded or followed by inebriety, are recorded in the English obstetrical journals. Cases of drunkenness during pregnancy, ending at delivery, are not uncommon. A remarkable case was noted at the Dublin Lying-in-Hospital some years ago, of a woman who, during the period of lactation drank gin to excess. This craving for stimulus began when the child was born and continued until the death or weaning of the child, the former being the most common termination. When lactation ceased the desire died away. Another case of equal interest is reported in a Western journal. A soldier wounded at Pittsburg Landing, previously temperate, became a paroxysmal drunkard. A portion of the shaft of the femur was injured, and continued to exfoliate dead bone until 1873, when it was removed by an operation. From the healing of the wound his drunkenness disappeared, and he is now one of the most enthusiastic of temperance men.

"Previous diseases are also active causes. Cerebral epilepsy, with its disordered fancies, auras and impulses ending in apparent recovery, only to be followed in time by a repetition, closely simulating the impulsive drunkard. The connection between inebriety and epilepsy is far more intimate than we are aware.

"Dietetic diseases—indigestion, inflammation of the stomach and liver often leave a train of predisposing causes. Exhaustive intellectual and physical exertion, by breaking up healthy cerebral action develops insane longings. Over-stimulation of the brain ends in changes and perverted tastes for alcohol or narcotics of some kind. Scholars and those who use the mind to excess, and laborers who only exert the physical system, when exhausted from overwork, have unnatural longings for something to restore the lost balance of mind and body. A prominent Senator spent thirty hours continuously in the preparation and delivery of a speech, and became an inebriate from that time. The sudden loss of property, disappointment, trouble, unrequited affections, may so depress the vital powers and disturb the circulation that drunkenness or insanity or both will follow. Ambition to lead, where it becomes a dominant passion, filling up every moment of thought, lowers the nutritive functions and leads directly to perversion of taste. Religious activity where the mind overflows with sentiment and emotion, may react into violent gluttonness or inebriety. No class of men are so thoroughly dyspeptic as clergymen and lawyers; simply the reaction of the mind to restore the equilibrium broken up by exhaustive labor. In every community large numbers of this class are on the verge of inebriety; all they need is the exciting cause; the fertile field is prepared to receive it.

"The perpetuity of the race depends upon the education received from both school and parent. If the child grows up surrounded with unnatural morbid influences, ignorant indulgences and worse school education its ruin is inevitable.

"Under the third group are included all those conditions and circumstances which seem to particularly favor the development of inebriety. Of these, age has a controlling influence. Inebriety occurs at a time when the brain has reached its period of fullest activity. The brain power of infancy and youth can not bear much irritation without peril, its circulation is more rapid and susceptible to sudden fluctuations which are intense in their influence. This is apparent in the cases of permanent injury which follow from fear, anger or sudden emotions that profoundly impress the organism. At this time of life, organic changes take place which have a correlative mental transformation, the active degree of ennervation existing makes the entire body extremely susceptible to commotions, in both the organic and mental development. I believe that future observations will indicate that inebriety begins here, although its development may be delayed for years. Sex, social condition, the season, weather, barometrical changes, unhealthy mental, physical and social surroundings, continuous excitement, and dark, damp, low places of residence are all causes of inebriety. The temperature and conditions of surroundings are evidently active causes. High degrees of heat and cold may so far impair the nutrition of the nerves, or produce paresis of the vasomotor centers as to result in inebriety. Sunstroke, inflammations, congestions and similar disorders of the brain cells coming from extremes of heat and cold are often followed by drunkenness.

"The captain of a South American steamer informed me that the firemen and most of the men employed (for any length of time) in this service became drunkards; this he attributed to the extremes of climate, and the heat to which they were constantly exposed. Leaving New York in midwinter, within a few days they are in a tropical temperature, then back again from the literal summer of the equator to the frequent polar temperature of New York. Inquiry among the furnace-men of Albany and Troy indicates the same facts; men exposed to a high heat after a time (to a large extent), become inebriates.

"Mental diseases are found to be largely controlled by cosmical influences, such as electrical phenomena, lunar attractions, velocities and directions of winds, geological formations, elevation above the sea level, etc. A professional man of great intelligence who is an inebriate becomes restless, depressed, and has headache and irregularity of temper when the wind blows from the south, and a storm is impending, also before a thunder storm. If he can resist the craving for liquor until the storm is over he is safe, but if the moon be at a change and the storm is delayed, he loses all control and has a paroxysm of drinking.

"In this very general review of the numerous causes, we have only indicated some of the great landmarks, leaving the wide field of hill and valley untouched.

"A brief summary may be indicated as follows:

"1. Inebriety or dipsomania, as a mental and physical disease, always is preceded by some special condition, circumstance or event, or alteration of structure.

"2. As in other diseases, the causes are numerous

and complex, either acting alone or together, increasing or diminishing, depending upon conditions not well understood.

"3. Its hereditary character and diathesis present many positive indications, which forecast its progress, and render its study a practical necessity to every student of science.

"4. As a stage or symptom of other disease, or a sequence, its causes and progress may be more obscure, but they have certain definite beginnings and endings, which a more accurate study will reveal.

"5. As a disease of accident or coincident, and circumstances or surroundings, its history and growth may be anticipated at every stage, and its result prognosed with certainty.

"6. Inebriety affecting the nutritive functions first, and after that the mind or *vice versa*, offers the widest field for research, and its pathologic and therapeutic relations extend over the entire realm of social and mental science."

Dr. Lewis D. Mason says: "It is our duty, then, when patients are sent to us or are sent to an asylum, to investigate the exciting cause of their inebriety. If it is some painful disorder and the patient tells us that he uses alcohol to relieve his pain, our course is at once apparent; to cure his disease or find some substitute for the alcohol. If we can not remove the cause, or find some efficient substitute for the alcohol, the patient passes to the incurable class of inebriates, a class that needs medical care as much as the incurable insane, requiring the treatment and restraint which only an asylum can give, for their constant or irregular resort to stimulants places them among the irresponsible classes of society. So whether curable or incurable, these persons who demand our heartiest sympathy will certainly present themselves. How we shall be enabled to recognize the possible exciting cause of their inebriety and perhaps forecast their future, is the object of this paper to point out."

Medical Students in Attendance on the Sessions of 1894-95 in the United States and Canada.

[Compiled for the JOURNAL by F. W. Reilly, M.D.]

In order to preserve the sequence of the Reports on Medical Education in the United States, and Canada, inaugurated and for many years so usefully carried on, by the late Dr. John H. Rauch, and subsequently continued by his assistant and successor, Dr. F. W. Reilly, the following circular letter was addressed last fall to the Deans, Registrars or Secretaries of 117 medical colleges which conducted lecture courses in 1893.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION,
86 FIFTH AVENUE.

CHICAGO, ILL., Oct. 29, 1894.

My Dear Doctor:—The JOURNAL desires "to take an account of stock" of the medical students in attendance at the current sessions of American Medical Colleges, and, to this end, forwards you the inclosed form which, it is hoped, will require from you a minimum outlay of time and trouble in filling up.

If not convenient to give the figures for all of the five sessions, it is desired that the numbers for 1893-94 and 1894-95 at least be furnished.

It is not now foreseen that mention of individual Colleges will be necessary or useful in the compilation, but no names of Colleges will be so used without express consent.

Inclosed please find stamped envelope for return of filled-out blank.

Faithfully yours,
JOHN B. HAMILTON, M.D., EDITOR.

The "inclosed form" provided for the name of the college, the name, address and official title of the respondent, returns of the numbers of students in attendance, by grades, at the sessions of 1890-91 to 1894-95 inclusive and a statement of the views of the respondent as to the cause or causes of any unusual increase or any decrease in the attendance at the present session.

This request was addressed to the following named institutions:*

Medical College of Alabama (1859) Mobile, Ala.
*Medical Department, Arkansas Industrial University (1879) Little Rock, Ark.
Cooper Medical College (1859) San Francisco, Cal.
Medical Department, University of California (1863) San Francisco, Cal.
*College of Medicine, University of Southern California (1885) Los Angelos, Cal.
*Denver Medical College (1881) Denver, Col.
*Medical Department University of Colorado (1883) Denver, Col.
Gross Medical College (1887) Denver, Col.
*Medical Department, Yale University (1810) New Haven, Conn.
*National Medical College (1821) Washington, D. C.
Medical Department, University of Georgetown (1850) Washington, D. C.
Medical Department, Howard University (1867) Washington, D. C.
Medical College of Georgia (1828) Augusta, Ga.
Atlanta Medical College (1854) Atlanta, Ga.
*Southern Medical College (1879) Atlanta, Ga.
Rush Medical College (1842) Chicago, Ill.
Northwestern University Medical School (1859) Chicago, Ill.
Northwestern University Woman's Medical School (1870) Chicago, Ill.
College of Physicians and Surgeons of Chicago (1882) Chicago, Ill.
Medical College of Indiana (1878) Indianapolis, Ind.
Central College of Physicians and Surgeons (1879) Indianapolis, Ind.
Fort Wayne College of Medicine (1889) Fort Wayne, Ind.
College of Physicians and Surgeons of Keokuk (1850) Keokuk, Iowa.
Medical Department, State University of Iowa (1870) Iowa City, Iowa.
Iowa College of Physicians and Surgeons (1882) Des Moines, Iowa.
Keokuk Medical College (1890) Keokuk, Iowa.
*Council Bluffs Medical College (1893) Council Bluffs, Iowa.
*Kansas Medical College (1889) Topeka, Kan.
University of Louisville, Medical Department (1837) Louisville, Ky.
*Kentucky School of Medicine (1850) Louisville, Ky.
Louisville Medical College (1869) Louisville, Ky.
Hospital College of Medicine (1873) Louisville, Ky.
*Medical Department, Tulane University of Louisiana (1834) New Orleans, La.
Medical Department, New Orleans University (1889) New Orleans, La.
Medical School of Maine at Bowdoin College (1820) Brunswick, Me.
University of Maryland School of Medicine (1807) Baltimore, Md.
College of Physicians and Surgeons of Baltimore (1872) Baltimore, Md.
Baltimore Medical College (1881) Baltimore, Md.
*Woman's Medical College of Baltimore (1882) Baltimore, Md.
Baltimore University School of Medicine (1884) Baltimore, Md.
Johns Hopkins Medical College (1893) Baltimore, Md.
Harvard University Medical School (1782) Boston, Mass.
College of Physicians and Surgeons (1880) Boston, Mass.
*Tufts College Medical School (1893) Boston, Mass.
*Michigan University, Department of Medicine and Surgery (1850) Ann Arbor, Mich.
Detroit College of Medicine (1885) Detroit, Mich.
Michigan College of Medicine and Surgery, (1888) Detroit, Mich.

*The colleges are here named in the alphabetical order of States and in the chronological order of dates of organization in each State group; the figures inclosed in parentheses indicate the year of organization.

*College of Medicine and Surgery, University of Minnesota (1883) Minneapolis, Minn.
*Minneapolis College of Physicians and Surgeons (1883) Minneapolis, Minn.
*Missouri Medical College (1840) St. Louis, Mo.
*St Louis Medical College (1841) St. Louis, Mo.
Medical Department, University of the State of Missouri (1845) Columbia, Mo.
Kansas City Medical College (1869) Kansas City, Mo.
*St. Louis College of Physicians and Surgeons (1869) St. Louis, Mo.
Northwestern Medical College of St. Joseph (1880) St. Joseph, Mo.
University Medical College of Kansas City (1881) Kansas City, Mo.
*Ensworth Medical College and Hospital (1882) St. Joseph, Mo.
Beaumont Hospital Medical College (1886) St. Louis, Mo.
Marion-Sims Medical College (1890) St. Louis, Mo.
*Barnes' Medical College (1891) St. Louis, Mo.
*Woman's Medical College and Hospital Association (1891) St. Louis, Mo.
*Omaha Medical College (1881) Omaha, Neb.
John A. Creighton Medical College (1892) Omaha, Neb.
*Dartmouth Medical College (1797) Hanover, N. H.
*College of Physicians and Surgeons of Columbia College in the City of New York (1807) New York City.
*Albany Medical College (1838) Albany, N. Y.
University Medical College (1841) New York City.
*Medical Department, University of Buffalo (1846) Buffalo, New York.
*Long Island College Hospital (1861) Brooklyn, N. Y.
Bellevue Hospital Medical College (1861) New York City.
Woman's Medical College of the New York Infirmary (1865) New York City.
*Syracuse University College of Medicine (1872) Syracuse, New York.
*Medical Department of Niagara University (1883) Buffalo, New York.
Leonard Medical School (1882) Raleigh, N. C.
North Carolina Medical College (1893) Davidson, N. C.
Medical College of Ohio (1819) Cincinnati, Ohio.
*Medical Department, Western Reserve University (1843) Cleveland, Ohio.
*Starling Medical College (1847) Columbus, Ohio.
Cincinnati College of Medicine and Surgery (1849) Cincinnati, Ohio.
Miami Medical College (1852) Cincinnati, Ohio.
*Medical Department, University of Wooster (1863) Cleveland, Ohio.
*Toledo Medical College (1883) Toledo, Ohio.
Woman's Medical College of Cincinnati (1887) Cincinnati, Ohio.
Ohio Medical University (1890) Columbus, Ohio.
*Presbyterian Hospital Woman's Medical College (1891) Cincinnati, Ohio.
*Medical Department of Willamette University (1864) Portland, Oregon.
*Medical Department, University of Oregon (1887) Portland, Oregon.
*University of Pennsylvania Medical Department (1765) Philadelphia, Pa.
*Jefferson Medical College (1826) Philadelphia, Pa.
Woman's Medical College of Pennsylvania (1850) Philadelphia, Pa.
Medico-Chirurgical College of Philadelphia (1881) Philadelphia, Pa.
*Medical Department, University of Western Pennsylvania (1886) Pittsburg, Pa.
*Medical College of the State of South Carolina (1832) Charleston, South Carolina.
Medical Department of the University of Nashville and Vanderbilt (1850) Nashville, Tenn.
Nashville Medical College (1876) Nashville, Tenn.
Meharry Medical Department of Central Tennessee College (1876) Nashville, Tenn.
Memphis Hospital Medical College (1880) Memphis, Tenn,
*Tennessee Medical College (1889) Knoxville, Tenn.
Chattanooga Medical College (1889) Chattanooga, Tenn.
Sewanee Medical College (1891) Sewanee, Tenn.
*Medical Department, University of Texas (1891) Galveston, Texas.
Medical Department University of Vermont (1823) Burlington, Vt.
*University of Virginia (1825) Charlottesville, Va.
*Medical College of Virginia (1838) Richmond, Va.
University College of Medicine (1893) Richmond, Va.
Wisconsin College of Physicians and Surgeons (1893) Milwaukee, Wis.
McGill University Faculty of Medicine (1824) Montreal, Quebec.
*University of Toronto Medical College (1843) Toronto, Ontario.
*Faculty of Medicine Laval University (1843) Montreal, Quebec.
*Trinity Medical College (1850) Toronto, Ontario.
Laval University at Quebec, Medical Department (1852) Quebec.
Royal College of Physicians and Surgeons (1854) Kingston, Ontario.
Halifax Medical College (1867) Halifax, N. S.
University of Bishop's College, Faculty of Medicine (1870) Montreal, Quebec.
Medical Department, Western University (1882) London, Ontario.
*Ontario Medical College for Women (1883) Toronto, Ontario.
Women's Medical College of Kingston (1883) Kingston, Ontario.
Manitoba Medical College (1883) Winnipeg, Ma.

Within three weeks of the date of the first circular, forty-nine colleges had responded, and on November 19 another circular letter was addressed to the sixty-eight from which no returns had then been received. It seems proper to make this statement because most of the colleges which first replied did so before their classes were fully made up for the session and there is, consequently, a shortage in the total actual attendance; the forty-nine colleges which first responded are indicated in the above list by *—this for the purpose of securing proper allowance for their incomplete returns.

The addition of three colleges which reported subsequent to the tabulation which formed the basis of the editorial on the "Increase of the Medical Student Class," in the JOURNAL of Dec. 29, 1894, somewhat reduces the estimated total attendance therein given. In 1892 the 101 colleges whose returns are above given reported a total attendance of 15,695 out of a grand total of 18,340—or 85.5 per cent. of the aggregate attendance at 117 colleges. For 1893 they report, as above, an attendance of 15,865, which is 85.5 per cent. of 18,500; for 1894 they report an attendance of 17,784, which is 85.5 per cent. of 20,800—the aggregate attendance of the sessions of 1894-95.

These figures show a very slight increase in the classes of 1893 over those of 1892—only 160, or a fraction less than 1 per cent.; while for the current sessions the increase is 12.4 per cent. over the sessions of 1893. This great gain in the student class seems to be at the expense of higher medical education; in 1893 there were 803 four-year students in attendance; this year there are only 781—a loss of 2.7 per cent.

The following figures furnish some interesting comparisons:

United Kingdom (Great Britain and Ireland), 8,696 total registered medical students between 1889 and 1893; for the year 1893, based on yearly accretions, 7,000;* population, 37,000,000.

France, total number medical students inscribed on the books of the Paris Faculty of Medicine for 1894, 5,144;† population, 40,000,000.

Germany, total number medical students registered for 1894, 8,684;‡ population, 50,000,000.

United States and Canada, total number medical students in attendance sessions of 1894, 20,800; population, 70,000,000.

Proportions: In the United Kingdom, 1 medical student to 5,286 of population; in France, 1 to 7,776 of population; in Germany, 1 to 5,757 of population; in the United States and Canada, 1 to 3,365 of population.

From the replies received and authorized for publication the accompanying table has been compiled.

*Correcting the statement of "an American contemporary"—that "England has but 552 medical students"—the British Medical Journal of Dec. 22, 1894, says: "In 1893 the number of freshmen in the medical schools of England, Scotland and Ireland was 1,742, and by adding up the entries of the last four years it is clear that at present there must be over seven thousand students in the medical schools of the United Kingdom." This is more than four times as many as estimated in the JOURNAL editorial based upon Sir Richard Quain's figures.
† Brouardel. ‡ Ascherson.

TABLE SHOWING NUMBER OF STUDENTS IN ATTENDANCE AT ONE HUNDRED AND ONE COLLEGES IN THE UNITED STATES AND CANADA: SESSIONS OF 1894-95, 1893-94, AND AVERAGE YEARLY ATTENDANCE OF PREVIOUS YEARS.

COLLEGES.	STUDENTS IN ATTENDANCE, BY GRADES: 1894-5.				TOTAL ATTENDANCE: 1894-5.	TOTAL ATTENDANCE; 1893-4.	AVERAGE YEARLY ATTENDANCE: 1889-90, 1893-94.	PER CENT. OF INCREASE OR DECREASE.	
	1st.	2d.	3d.	4th.				1894-95 compared with 1893-94.	1894-95 compared with prev. 5 yrs.
Medical College of Alabama	53	32	16	. . . .	101	102	128	—.98	—21.
1 Medical Department Arkansas Industrial University	50	22	3	. . . .	75	74	85	1.3+	—11.7
2 Cooper Medical College	75	78	75	. . . .	228	228	160	. . . .	42.5
Medical Department University of California	33	46	66	. . . .	145	109	89	33.+	63.+
College of Medicine, University of Southern California	18	16	10	. . . .	44	37	30	18.9+	46.6+
3 Denver Medical College	10	15	13	. . . .	38	38	43	. . . .	—11.6
4 Medical Department University of Colorado	20	15	15	. . . .	50	35	23	42.8+	117.4+
Gross Medical College	. .	. .	. .	. . . .	72	18	51	—10.	41.1+
5 Medical Department Yale University	60	20	14	. . . .	94	73	65	28.7+	44.6+
6 National Medical College	75	40	. .	55	170	151	151	12.5+	12.5+
7 Medical Department University of Georgetown	39	36	35	11	121	136	116	—11.	4.3+
8 Medical Department Howard University	48	36	10	25	119	. . . .	107	. . . .	11.2+
Atlanta Medical College	50	160	. .	. . . .	210	173	163	21.4+	28.8+
9 Southern Medical College	52	15	14	. . . .	82	81	87	1.2+	—5.7
Rush Medical College	330	300	170	. . . .	800	767	613	4.2+	30.5+
Northwestern University Medical College	96	76	93	8	265	252	239	5.1+	2.3+
10 College of Physicians and Surgeons of Chicago	67	53	40	86	246	288	222	—14.5	10.8+
11 Central College of Physicians and Surgeons	. .	. .	. .	. . . .	52	38	36	36.8+	44.4+
12 College of Physicians and Surgeons of Keokuk	122	78	33	5	238	176	141	35.2+	68.8+
Medical Department State University of Iowa	85	65	43	. . . .	193	162	145	19.1+	33.1+
Iowa College of Physicians and Surgeons	35	15	13	. . . .	63	48	39	31.2+	61.5+
Keokuk Medical College	61	42	40	. . . .	143	143	145	. . . .	—1.3
Council Bluffs Medical College	5	9	. .	. . . .	14	12	. .	16.6+	. . . .
Kansas Medical College	29	18	8	. . . .	55	45	44	22.2+	25.+
Kentucky School of Medicine	. .	. .	. .	. . . .	426	504	440	—15.4	—3.2
Hospital College of Medicine	. .	. .	. .	. . . .	210	123	127	70.7+	65.3+
13 Medical Department New Orleans University	11	12	5	. . . .	28	36	19	—23.2	47.3+
Medical School of Maine	53	30	30	3	116	97	95	19.6+	21.5+
College of Physicians and Surgeons of Baltimore	167	168	119	8	462	461	470	.2+	—1.7
14 Baltimore Medical College	140	106	116	8	409	303	219	35.1+	86.7+
Woman's Medical College of Baltimore	28	8	4	2	42	20	22	110.+	90.9+
15 Johns Hopkins University	32	19	. .	. . . .	51	18	. .	183.3+	. . . .
Harvard University Medical School	282	124	96	34	436	420	282	3.9+	14.1+
College of Physicians and Surgeons of Boston	43	77	10	. . . .	130	137	87	—12.4	37.9+
Tufts College Medical School	41	23	21	. . . .	85	72	. .	18.+	. . . .
16 Michigan Univ., Department of Medicine and Surgery	116	101	66	65	348	380	364	—8.4	—4.3
Detroit College of Medicine	111	95	78	. . . .	284	285	218	—.35	30.2+
Michigan College of Medicine and Surgery	53	41	22	5	121	118	115	2.5+	5.2+
College of Medicine and Surgery, Univ. of Minnesota	102	66	53	. . . .	221	181	141	22.+	56.+
17 Minneapolis College of Physicians and Surgeons	22	17	18	. . . .	57	13	. .	. . . .	. . . .
Missouri Medical College	76	64	74	2	216	182	190	18.6+	13.6+
St. Louis Medical College	43	41	26	. . . .	110	93	121	15.7+	—9
Medical Department, University of the State of Missouri	22	12	5	. . . .	39	39	37	5.4+	5.4+
Kansas City Medical College	34	48	31	. . . .	113	109	88	3.6+	28.4+
18 St. Louis College of Physicians and Surgeons	106	94	42	14	256	140	183	82.8+	40.+
19 University Medical College Kansas City	65	52	39	. . . .	156	119	100	31.+	56.+
20 Ensworth Medical College and Hospital	. .	. .	. .	. . . .	. .	38	56	. . . .	. . . .
Barnes Medical College	108	92	92	23	315	236	249	33.4+	26.5+
21 Woman's Medical College of St. Louis	18	9	4	. . . .	31	43	26	—28.	19.2+
Omaha Medical College	38	25	24	. . . .	87	75	49	16.+	77.5+
John A. Creighton Medical College	11	25	15	. . . .	51	33	. .	54.5+	. . . .
22 Dartmouth Medical College	. .	. .	. .	. . . .	139	114	100	21.9+	39.+
23 College of Physicians and Surgeons of Columbia College	222	241	231	83	777	786	630	—1.1	23.3+
24 Albany Medical College	76	53	58	. . . .	187	178	165	8.+	13.3+
25 University Medical College, New York City	152	111	114	. . . .	377	365	531	3.3+	—29.
Medical Department, University of Buffalo	93	84	64	. . . .	241	188	184	28.+	31.+
26 Long Island College Hospital	95	63	59	24	241	255	231	—5.8	4.3+
27 Bellevue Hospital Medical College	120	110	115	. . . .	405	407	419	—.5	—3.4
28 Woman's Medical College of the New York Infirmary	33	19	34	. . . .	86	82	86	4.8+	. . . .
Syracuse University College of Medicine	34	30	17	. . . .	81	61	54	32.8+	50.+
Medical Department of Niagara University	21	23	19	3	66	57	48	19.3+	37.5+
Leonard Medical College, Shaw University	13	9	15	11	48	57	49	—15.8	—2.
North Carolina Medical College	. .	24	. .	. . . .	24	16	. .	50.+	. . . .
Medical College of Ohio	. .	. .	. .	. . . .	296	242	237	22.3+	24.8+
29 Medical Department, Western Reserve University	42	32	32	. . . .	106	93	130	14.+	—18.4
Starling Medical College	122	99	86	. . . .	287	223	165	28.7+	73.9+
30 Miami Medical College	. .	. .	. .	. . . .	95	92	89	3.2+	6.7+
31 Toledo Medical College	21	20	9	. . . .	50	38	38	31.5+	31.5+
Woman's Medical College of Cincinnati	15	10	9	1	35	. .	26	34.6+	. . . .
32 Ohio Medical University	56	29	26	. . . .	141	79	80	78.5+	78.4+
Medical Department of Willamette University	14	15	7	. . . .	34	36	31	—5.5	9.7+
33 Medical Department, University of Oregon	23	12	7	. . . .	42	29	23	45.+	82.6+
34 University of Pennsylvania, Medical Department	244	196	352	. . . .	792	787	671	.6+	18.+
35 Jefferson Medical College	220	251	225	. . . .	726	640	591	17.8+	25.4+
36 Woman's Medical College of Pennsylvania	. .	. .	. .	. . . .	168	192	192	—12.5	—12.5
Medico-Chirurgical College	74	54	81	. . . .	209	184	140	13.+	49.3+
37 Medical Department, Univ. of Western Pennsylvania	115	94	72	. . . .	281	262	184	7.2+	52.6+
38 Medical College of the State of South Carolina	25	30	25	. . . .	80	70	60	14.3+	33.3
Nashville Medical College	. .	. .	. .	. . . .	180	234	251	—23.	—24.2
39 Meharry Medical College	37	32	31	. . . .	101	107	90	—5.6	12.2+
40 Tennessee Medical College	32	22	12	. . . .	66	79	68	—16.4	—12.9
41 Sewanee Medical College	. .	. .	. .	. . . .	47	25	. .	67.8+	. . . .
Medical Department, University of Texas	85	55	8	. . . .	148	116	55	27.6+	169.1+
Medical Department, University of Vermont	. .	. .	. .	. . . .	202	192	190	4.9+	6.3+
University of Virginia	86	82	. .	15	168	143	130	17.4+	29.2+
42 Medical College of Virginia	53	57	7	. . . .	132	96	67	37.5+	97.+
Wisconsin College of Physicians and Surgeons	16	15	3	. . . .	34	31	. .	9.7+	. . . .
43 McGill University, Faculty of Medicine	111	120	95	70	398	350	237	13.7+	67.9+
Faculty of Medicine, Laval University	45	45	55	59	247	286	280	—13.6	—16.
Trinity Medical College	. .	. .	. .	. . . .	306	. .	292	. . . .	4.8+
Halifax Medical College	26	7	8	6	43	. .	33	. . . .	30.3+
University of Bishop's College, Faculty of Medicine	. .	. .	. .	. . . .	64	54	52	11.1+	15.4+
44 Manitoba Medical College	45	36	23	26	130	101	76	28.7+	71.+
Ontario Medical College for Women	9	10	7	11	37	34	34	8.8+	8.8+
Anonymous Schools	356	322	221	118	*1057	1057	* 910	. . . .	16.1+

1 A number preceding a college title refers to a note or comment bearing the same number in the Notes and Comments column following this Table. * Including 40 specials.

The foregoing table gives the following aggregates for the 101 reporting Colleges, including 7 not specified by name, but whose totals are given under the title "Anonymous Schools."

First year students	6,198
Second year students	5,248
Third year students	3,398
Fourth year students	781
Special and irregulars	2,359
Aggregate attendance, 1894	17,784
Aggr-gate attendance, 1893	15,865
Aggregate average previous years	14,559
Percentages of increase:	
1893 over average of previous years	8.9
1894 over 1893	12.4
1894 over average of previous years	22.1

NOTES AND COMMENTS.

[1] Estimated; return made "first day of regular winter term; students not all in. Decrease in numbers since 1891–92 due to adoption of three years' compulsory course."

[2] "We have just adopted a four-year curriculum. In the first year of the table, seventy-five includes students of the first and second years of the four-year course, *i.e.*, first year thirty-seven, second year thirty-eight; total, seventy-five. I may say in addition that these figures include from two to five physicians each year—as well as a number each year who do not 'stick,' but as the same occurs at other colleges I presume these figures will afford basis for comparison."

[3] "The decrease in our attendance can be directly traced to the unequal competition of a State school removing to Denver and taking any student who applies, at no cost to the student whatever. It also means that our standard has been maintained."

[4] "Four-years' course begins with the session of 1895-96. A large increase occurred in sessions of 1893-94, owing to second and third years being taught in Denver, instead of Boulder, giving good clinical advantages. The increase seems likely to continue."

[5] "You will note that there has uniformly been a larger number of students in the first year than in the second or third. This has been due to the fact that a very considerable number of students fail at the end of the first year, and therefore have to repeat their work. Our entrance requirements are placed at the high school grade in the subjects in which we require examinations, and these requirements are well enforced, yet we have this large percentage of failures of men who can not stand the work of our first year. I do not know whether this is the experience elsewhere, but certainly our matriculation requirements are higher than the average of the country, and the whole thing seems to me to be a strong argument for the necessity of a higher grade of matriculation. I have felt for some time that this increase in the matriculation requirement was more needed in this country than the increase of time of study; that is, that three years with well prepared students would be better for the profession than a larger number of students kept at their professional work for a year longer. This opinion, however, does not seem to be the one which has prevailed. We have delayed starting the four years' course, hoping that there would be a general increase in matriculation requirements first, and while we do not altogether give up the hope of increasing matriculation examinations, we are about to adopt the four years' course in conformity with the other schools of the better class. I wish you might have included in your examination, the question of the proportion of medical students who are college graduates, and whether this is increasing or diminishing."

[6] "In this list the third and fourth years are given together, as last year was the beginning of the four year system."

[7] "A large number of students who matriculated last year withdrew and went to schools with a three-year course. The four-year course was made obligatory last year. This probably reduced the number of matriculates this year."

[8] "Four years' course began with the session of 1892-93."

[9] "The scholastic year has just been changed to a three-year term, and this is the first year of such change."

[10] "Small attendance in our second course is attributed to the fact that those who attended with us in 1893-94 can graduate in ——— Medical College at end of this term, while we would require them to attend until end of 1895-96. Those seeking early graduation have thus left us. The large increase in our first-year course is due to the school having adopted a three-year graded course and having by hard work for fifteen years established a very good reputation for giving thorough instruction." Total attendance 1894-95 (82) includes "one fourth year." The college, however, is not a four-year school.

[11] "The reason of decrease is on account of the grade being raised and examination more difficult; also our course being four years instead of three."

[12] "There is a larger percentage of students who have attended literary colleges than in any former year."

[13] "Faculty reorganized in 1890–91, with resulting steady improvement in size of the class."

[14] "Our school two years ago adopted a four years' course of study."

[15] Total 409 includes "two fifth year, one eighth year and thirty-six" not graded at date of making report.

[16] Attendance 1893–94 includes three women; first year, 1894–95 includes eight women; second year 1894–95 includes two women. "Our medical school is now in its second year. A noteworthy fact is that all of the fifty-two persons admitted in the two years are graduates of a reputable college, holding baccalaureate degrees, and several of them have pursued graduate studies in the sciences after completing their college work. In addition to these undergraduates in medicine, a large number of physicians are attending special courses in the Johns Hopkins Hospital given by University professors: 1893–94—65; 1894–95 (to November 21) —44."

[17] "The large senior classes in 1891 and 1892 were due to the fact that in 1890 we changed from a three to a four years' course. This change, which was announced some years beforehand, brought us large classes in 1888 and 1889, students realizing that if they entered later than 1889, they would have to spend four years here. The small senior class in 1893 is explained in the same way. It appears from the figures that we have fewer medical students than we had last year. This is not true. The number is about the same as it was this time last year. There are always students coming here in the fall, who are unprepared to enter the medical course and have to do some work in the literary department or in the high school before they can enter. Some of these will enter the medical department at the beginning of the second semester. They will not be able to graduate with those who entered this last October, but it will increase the number of students appearing on our register when it is published next spring."

[18] "This college was reorganized last year, so members for past years would not be of value for statistical purposes."

[19] Causes of increased attendance: "Faculty thoroughly reorganized and prominent teachers from numerous Western schools having been selected. Also refusal to admit inferior students—no candidate being accepted unless presenting diploma of college or high school. College has no entrance examinations; they are farces!"

[20] "There has been an increase, due to the fact that the school has offered unusual clinical advantages, which have attracted students, in spite of the business depression. This increase is so marked, as evidenced by the fact that more than one-third more actual attendants are present, so that the capacity of the college is strained to accommodate the students. Matriculation list is twenty-five higher than attendance."

[21] "There was a marked falling off last session. The chief cause was, I think, that no one could graduate on two terms and such sought other schools. One of these now finds that his two-term diploma will not register him and he proposes to take another course. Another cause was that some of them thought they could more certainly graduate in another school. The hard times was another cause."

[22] "We had forty-three students in attendance last session; this year thirty-one—decrease the result of the scarcity of money."

[23] "The present is the ninety-eighth annual course of lectures at this college, and the number of students is the largest in its history. Causes: A hospital has just been opened in town. Possibly the depression in general business may have some influence."

[24] "There is a decrease in the first year, due to the establishment of the four-years' course."

[25] Not complete; return made November 1.

[26] "The junior class of session of 1891 was the first under the graded system."

[27] "Our collegiate year does not close until June, 1895, and we always have a considerable number entering our reading term in March—these will bring our number for 1894-95 up to 280 or more. This is the largest class we have ever had, and is undoubtedly due to the clinical advantages we offer."

[28] "1890–91 was the last year of the two-years' system; 1891–92 was the first year of the *obligatory* three-years' system. The unusually large class of 1890–91 was due to the fact that many students intend to take advantage of the

two-years' system. In 1891-92 three courses of lectures were made obligatory. Students were required to pay for each course attended and the fees on lectures were raised from $140 to $150. *Unclassified* includes those who did not attend the full regular course." In the total 409 for 1894-95 are included 60 "unclassified," and in the total 407 for 1993-94 are included 85.

[29] "Our four-years' course began with the session of 1893-94 and there are consequently no fourth year students as yet." The total third year students (thirty-four) include eight who are in the third year of the four-years' course.

[30] "With the session of 1896-97 we will require a fourth year. It is now optional."

[31] The increase seems to affect all schools, more or less, and is probably due to prospective enforcement of the four-years' course next year.

[32] "Increased facilities for instruction over years gone by have increased our class from thirty-eight the past season to fifty for the present."

[33] "The increase is due largely to the reputation of the school among college-trained students and school teachers. Our school is conducted on the normal methods of teaching. The students are enthusiastic and spread the good news to their friends seeking a medical education."

[34] "Increasing good reputation of the school and perhaps because of lack of opportunities for employment on account of times has driven more persons than usual to professional study."

[35] "The total number in attendance this year (session of 1894-95) may be increased by about thirty when students at present under conditions are permitted to matriculate after their conditions are passed."

[36] "Partly due to the fact that we begin our compulsory four years' course next year. Any progressive movement like this increases the popularity of the school as it indicates a determination to take a higher stand among the medical colleges."

[37] "The recent reduction in the number of students was probably due to the lengthening of the course of study to four years and the advance in the standard of entrance requirements adopted by the college."

[38] "The great clinical advantages by reason of its proximity to a large general hospital, viz.: The Western Pennsylvania Hospital. This and the fact that we have adopted the three years' graded course explains the increased attendance."

[39] "Our facilities for teaching are being yearly increased and an increasing number of students are in attendance."

[40] "We now have a four-years' course of study."

[41] "The decrease is owing to the stringency in money matters all over the country."

[42] Heretofore conducted as a spring and summer school, not graded. "The school has now withdrawn from the Southern Medical College Association and will teach annual terms of ten months, from first of March to latter part of December, and permit students to apply for graduation after attendance upon two such annual terms and three years of study."

[43] "We have no required third year, but some students do distribute their study over three years." Two annual sessions of nine continuous months each are required for graduation. "The increase of students is due to the establishment of the graded course."

[44] "We have ten State scholarships, given in consideration of the fact that we receive aid annually from the State. We have no other scholarship feature, as is so often found in other medical institutions, or our number of matriculates would have been greatly increased. We have no dental or pharmacal department connected with our school. It is proper to state that the number of students above for session 1894-95 is incomplete, as we expect a number more to come in soon."

[45] "During the last session the qualifications for degree were increased from four six months' sessions and two compulsory summer sessions of three months each, to four sessions of nine months each. The increase in students was unexpectedly large this year which we attribute chiefly to the increased clinical advantages afforded from the opening of the new Royal Victoria Hospital."

[46] "The increase during the present session is probably due: 1, to the fact that the enlargement of the building last summer, increasing it to double its former size, was well advertised throughout the Province; 2, the work of the college is becoming favorably known; 3, the proportion of young men entering the profession in this section of the country, as shown by increasing attendance, is rapidly (too much so, possibly,) on the increase; 4, it has become generally known that it is the intention of the college to lengthen the term. This has had the effect of bringing a few students in earlier than they would otherwise have come."

Replies were finally received from all but the following:

Medical College of Georgia.
Medical College of Indiana.
Fort Wayne College of Medicine.
University of Louisville, Medical Department.
Louisville Medical College.
University of Maryland School of Medicine.
Baltimore Medical College.
Northwestern Medical College of St. Joseph.
Beaumont Hospital Medical College.
Marion-Sims Medical College.
Cincinnati College of Medicine and Surgery.
Medical Department, University of Nashville and Vanderbilt.
Memphis Medical College.
Royal College of Physicians and Surgeons.
Medical Department, Western University.
Women's Medical College of Kingston.
Laval University at Quebec, Medical Department.

Seven other colleges—two in Ohio, and one each in Illinois, Louisiana, Tennessee, Virginia and Canada—failed to give consent to the use of their names and these are consequently omitted in the preceding table; the figures furnished by them are, however, used in the aggregates—entered as "*Anonymous Schools.*"

NOTE.—The JOURNAL will be pleased to make additions to the foregoing from colleges that have not heretofore responded and any proper revisions of the statements as published.—ED.

ASSOCIATION NEWS.

The Journal is Now Copyrighted.—At the last meeting of the Committee on Management of the Board of Trustees, President Garcelon presiding, a resolution was passed directing the editor hereafter to have the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION copyrighted each week. The Trustees directed that all journals should have full and complete permission to reprint any article appearing in the JOURNAL, or part thereof, provided due credit is given to this journal when the article or item is reproduced.—JOURNAL AMERICAN MEDICAL ASSOCIATION.

[Good work well done.]—*Southern Practitioner.*

SOCIETY NEWS.

Marion County (Ohio) Medical Society.—At the annual meeting of the Marion County Medical Society held in Marion, the following officers were elected for the ensuing year: Dana O. Webb, President; D. S. Maddox, Vice-President; A. M. Crane, Secretary; H. L. Uhler, Treasurer; O. W. Weeks, W. C. Denman and F. W. Thomas, Standing Committee. A new constitution and by-laws were adopted and signed by the members. The report of the committee on the revision of the fee-bill was made the special order of business at the next regular meeting in February, at which time the newly elected President will deliver his inaugural address.

Lancaster (Pa.) City and County Medical Society.—The regular monthly meeting of the Lancaster City and County Medical Society was held January 2. The attendance was large. The election of officers, which was the most important business of the meeting, resulted as follows: President, T. J. Wentz, New Providence: Vice-Presidents, J. A. E. Reed and J. F. Trexler; Recording Secretary, William Blackwood; Corresponding Secretary, Walter Boardman; Treasurer, G. R. Rohrer; Censors, A. M. Miller, Bird-in Hand, William Compton and M. L. Davis.

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On receipt of the subscription the weekly JOURNAL of the Association will be forwarded regularly.

Gentlemen already members of the Association should send their annual subscription to the Treasurer, or direct to the JOURNAL office.

All communications and manuscript of whatever character, intended for publication in the JOURNAL, should be addressed to the *Editor*, and all communications relative to the business of the JOURNAL, proof sheets returned, or in regard to subscriptions, should be addressed to THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, 86 Fifth Avenue, Chicago.

SATURDAY, JANUARY 12, 1895.

THE BOOK REVIEW BUSINESS.

"As good almost kill a man as kill a good book; who kills a man kills a reasonable creature, God's image; but he who destroys a good book kills reason itself."—MILTON'S *Areopagitica*.

It is with genuine regret that we invite the attention of the American medical profession to an abuse which has arisen in the matter of reviewing books by some otherwise excellent medical journals. For some years we have been watching the review columns of certain of our contemporaries to see if they showed the secret influence of the publisher. Facts which have come to our ears in the past year or two prove the suspicion to be more or less well founded that in reviewing or in *not* reviewing the publications of rival houses, the publisher's financial interest is frequently more plainly manifest than the reviewer's scientific interest. In other words, the editor-reviewer instead of speaking solely from the standpoint of the scientific or literary critic, becomes the mouthpiece of the publisher, and his opinion is accordingly vitiated as a medical guide.

The guiding principle of a dignified medical journal is that the reviewer and editor shall tell his readers the truth about a book sent for review, as he himself thinks and believes. He does not assume infallibility, but simply gives his opinion. But when the publisher of the journal is also the publisher of a competing book, and by some invisible method makes the editor speak according to the dictates of mercantile rivalry, we then have the abuse of which we complain.

Far worse, however, than misrepresentation of a book and manifest hypocrisy, is to ignore it altogether Not to review the competing book of a rival firm is worse than to review it through the counting-house spectacles. It is worse because it is mean, and because it is not likely to escape attention except by the rival publisher or author. Such a height has this editorial subserviency and publisher's dictation attained, that publishing houses often do not send certain new books to certain journals, because they fear that they can not get a fair review, or because they can get no review whatsoever.

The moral of the whole matter is the discreditableness of editorial subserviency, and the wrongfulness of the publisher in using for commercial purposes the columns of a journal supposed to be devoted solely to medical and scientific matters. There are, to be sure, all grades or degrees of this subserviency from that of the man who copies the eulogistic printed notices sent in advance by the publishers of the vilest trash, up to that of the "Olympian" editor smothered in respectability, and who, obedient to the wink of the publication office, damns with very faint praise or entirely ignores a great book, the merest mention of which might lessen the sales of a rival volume. And still another and important moral should not be omitted—the duty of the medical profession to own and govern the conduct of its journals. It is only in journals of the profession, for the profession and by the profession, that physicians will always be certain to find "the truth, the whole truth and nothing but the truth." In its review department, for instance, the readers of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION may rest assured that no secret influence governs the criticisms given of current literature. We have no interest in misrepresentation, in exaggerated fault finding, or in exaggerated praise, and more than all we have no interest in silently ignoring good books sent us for review. The progress of medical science depends largely on the dissemination of the best books, and the recommendation or criticism of books by medical journals should be carried on conscientiously and in the interest of medicine and not of the publication office. In fact it was for this reason, as much as for any other, that the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION was founded.

THE MAYBRICK CASE.

This celebrated case continues to attract attention in this country and in England. There is a well founded belief that MRS. MAYBRICK is innocent, but thus far public sentiment has not been strong enough to move the Home Secretary to grant a pardon to this most unfortunate woman.

Perhaps there has never been a more flagrant example of jury incompetency than was shown in this trial. Of late there has been an increasing distrust in juries, and we would by no means join in a sweeping condemnation of jury trials, but believe

that surrounded by proper safeguards it has an abiding place in our jurisprudence. It is, however, in cases of involved circumstantial evidence such as the MAYBRICK case, that the ordinary jury fails. The average jury is able to judge of the credibility of witnesses and the general trend of testimony, but when it comes to weighing a complicated set of circumstances, the highly trained and educated mind can alone deal successfully with them. The jury which tried MRS. MAYBRICK, if we are to believe the statements concerning it, was rather below average intelligence. The judge who presided and is supposed to guide the jury in just such difficult cases was shown to have been suffering from paretic dementia at the time of the trial. He made a most intemperate charge which bore strongly against the prisoner and belittled every circumstance that pointed towards her innocence.

The chief points relied on by the Crown in this case were that MRS. MAYBRICK purchased arsenical fly paper, and shortly after her husband was taken with a severe gastro-intestinal inflammation. Arsenic was found in a medicine bottle and in some luncheon put up by her for her husband. Supplies of arsenic were found in places about the house to which the prisoner had access. The accused had been unfaithful to her husband who had beaten her and she had written to her lover stating that MR. MAYBRICK was dangerously ill. Arsenic was found in a bottle of glycerin which she gave the nurse to cleanse MR. MAYBRICK's mouth. There were arsenical stains on her dressing gown. Her husband said: "Don't give me the wrong medicine again," and "Oh, Bunny, how could you do it? I did not think this of you."

On behalf of the prisoner it was shown that she had used arsenical fly papers in making a face wash. The purchase was openly made and she bought other ingredients at the same time. Her husband had been ailing for a long time with a severe gastro-intestinal disorder. He was a confirmed arsenic eater, and used to take it in his food at luncheon. The arsenic found about the house could not have been derived from the fly paper, and the purchase of the latter showed that she was not aware that arsenic was in the house, and since the trial this arsenic has been traced to the husband. The prisoner summoned the physicians and the nurse. The letter to the lover contained other exaggerations than that regarding the illness of her husband and was written for the purpose of inducing him to remain in the country. After their quarrel, husband and wife had become reconciled, and the illness began a month later. Arsenic in quantity as large as that found in the mouth wash is a common impurity in glycerin. The spots on the dressing gown are easily accounted for by the use of the face wash. The husband never referred in any way to poison or arsenic, though he knew there was a supply in the house, and felt certain that his wife was unfaithful to him. The change for the worse in MR. MAYBRICK took place the day he forgot to take the luncheon which his wife had prepared, and in no case did it appear that the illness was aggravated soon after anything administered by the accused. The amount of arsenic found *post-mortem* was far less than a fatal dose and was consistent with its medicinal administration. This opinion was given by the late CHARLES MEYMAT TIDY, an authority in legal medicine and one of the best toxicologists in England.

It may be that MRS. MAYBRICK is guilty of the murder of her husband, but if so there is a deplorable lack of evidence of the fact. As for the ordinary legal rule, that reasonable doubt shall acquit, it becomes an utter absurdity when applied to such evidence as was adduced in her case.

THE MEDICAL COLLEGES OF THE UNITED STATES.

Some weeks ago the JOURNAL sent out a circular to all the Medical Colleges in the United States and Canada, and the returns which are now all in, were handed to DR. FRANK W. REILLY, well known as an authority on the subject of medical education, for tabulation and summary. The results are this week spread before our readers, and will doubtless surprise many whose knowledge on the subject is not based on intimate acquaintance with the schools themselves. The advance that has been made in the last decade is not so apparent as to be very gratifying to the friends of higher medical education generally, or to the medical profession. The report may well serve as a convenient basis for comparison, in the year 1905, and the JOURNAL of that year, we trust may be able to show a progress equally marked.

SELECTIONS.

A Department of Public Health.—The country is to be congratulated upon the fact that the President's message to Congress recommends a Public Health Department. Through the whole message, there is no more important subject considered than this one. Indeed, for the benefit of the people at large it outweighs in importance all other subjects considered in his message. The people may differ as to free iron and coal, and as to the repeal of the differential duty on sugar; it may be doubted, too, whether the Army should be increased in numbers or not, and some might doubt the propriety of extending the coast defenses, but if the health of the nation is to be preserved, no one can doubt that a Department of Public Health should be established. The following is the pointed way in which the President states his opinion on this matter:

"I am entirely convinced that we ought not to be longer without a National Board of Health or National Health Officer charged with no other duties than such as pertain to the protection of our country from the invasion of pestilence and disease. This would involve the establishment, by such board or officer, of proper quarantine precautions or the necessary aid and counsel to local authorities on the

subject, prompt advice and assistance to local boards of health or health officers in the suppression of contagious diseases, and, in cases where there are no such local boards or officers, the immediate direction by the National Board or Officer, of measures of suppression, constant and authentic information concerning the health of foreign countries and all parts of our own country as related to contagious diseases, and consideration of regulations to be enforced in foreign ports to prevent the introduction of contagion into our cities and the measures which should be adopted to secure their enforcement.

"There seems to be at this time a decided inclination to discuss measures of protection against contagious diseases in international conference, with a view of adopting means of mutual assistance. The creation of such a National Health establishment would greatly aid our standing in such conferences and improve our opportunities to avail ourselves of their benefits. I earnestly recommend the inauguration of a National Board of Health or similar National instrumentality, believing the same to be a needed precaution against contagious disease and in the interest of the safety and health of our people."

The farming element of the country was clamorous for a long time that a Department of Agriculture should be established, and it was only within the last few years that recognition was accorded it. That it was a wise move the whole country now agrees. How much more important is it that a Public Health Department be established. When one reads in the daily press of the existence of great epidemics prevailing across the water, the danger is made very apparent and we call for assistance and protection from every hand. In times past, such scourges as cholera and yellow fever were left alone to devastate our country with no recognized power to stop their onward progress. With a Department of Public Health established, and a Secretary of the same in the Cabinet, the country would feel safe, in that a power existed that would enable us to grapple with such terrible monsters. It is well enough to look after the finances, and have an able Secretary of the Treasury; it is important that the Army should be looked after by the Secretary of War; that the Navy should be made a pride to the country, and its head should be, as it is, represented by a great mind. Each and all of these departments that have at their head honored and distinguished men deserve to be controlled with the greatest accuracy and precision. To this proposition no one would dissent, and yet, strange to say, the Congress of the United States in the past has hesitated to establish a Department of Public Health. To keep abreast of the times and to be equal to other nations, the time has now come when such action is imperative. We find other nations are continually appointing commissions for the investigations of contagious diseases. Their people must and shall be protected from all such. Money is expended freely and lavishly for the investigation of scientific medical problems, and the result is that thousands upon thousands of lives are saved annually. We do not want to fall behind others in this line of duty, but in every international conference of this kind the United States should be represented and backed by the strong hand of the Government. In the name, then, of science, of mercy, and of justice to the people at large, let a Public Health Department be established. The medical profession of America will unite as one man in thanking the President for his recommendation in this matter. Let every medical journal in the land publish and indorse his views. Quoting the able editor of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, we would say: "*Let there be created a Department of Public Health.*"—*Mathews' Medical Quarterly.*

Must be Recognized.—Medicine must be recognized in the Presidential Cabinet, and also in the official family of every governor and mayor of large municipalities.—*Cincinnati Lancet-Clinic.*

CORRESPONDENCE.

Medical Education and the Colleges.

BOSTON, MASS., Jan. 2, 1895.

To the Editor:—The numerous addresses, editorials and letters which have appeared recently, not only in your own valued JOURNAL, but in many others, show how much the medical profession is thinking and talking about its own condition and how anxious it is to set its own house in order. They have inspired me also, who have had something to do with the manufacture of doctors in more than one State, and who have had many opportunities to inspect the finished product, to make a few remarks on the same subject.

It is said that the medical profession in the United States is overcrowded. It can not be denied. The sick among 450 people do not need a whole doctor, and unless they include a liberal proportion of the 400 or their imitators, or unless very vigorously cultivated, do not support one. Hence the multiplication of specialties. But is it the only profession which is crowded? Ask any young man just out of college what he intends to study next, and see if he thinks there is any walk of life which he can enter without pushing. It is simply bearing a part in the general tendency of the times.

There are, however, certain causes for a special overcrowding of this profession, for a part of which it is itself to blame and another part which has its roots far deeper in the weaknesses of human nature. A young man generally chooses his profession more or less consciously, from one of three motives, or perhaps two of them combined: 1, the attractiveness of its study or practice to his intellectual and moral tastes; 2, the probability of its giving him a comfortable subsistence; or, 3, the possibility of its making him very rich or very famous. The first of these motives brings the best and a very large class of material to the medical profession. The men who choose the study of medicine for their love of science and who practice it because it brings them nearer to science and to humanity are the solid standbys of the profession, the steady line of brave and disciplined men without whom it would become an incoherent mob of self-seeking, vainglorious, boasting, turbulent quacks. Happily they are in the majority. Unfortunately it is not rare to meet those who have persuaded themselves that they have an overmastering love for science or for medicine merely because they have so intense a dislike for the other alternatives, which are apt to be some of the humbler walks of life in which they might, if they would, walk, less conspicuously indeed, but with much greater benefit to the community. I remember the surgeon in a military hospital showing me a case where the first surgeon had sewed up a scalp wound very neatly over a fracture of the cranium, with the remark that he had "spoiled a good tailor to make a poor surgeon."

This brings me to the second class, who choose medicine simply as a means to a comfortable livelihood and perhaps to an improvement in social position. Here, too, a normal and proper desire if backed by good sense and industry, send into the profession many, not usually its brightest ornaments, but excellent practitioners and highly useful men in the community.

The third class attack the profession and the public at its weakest point. The gambling instinct, the desire to "go a-fishing," to "take a flyer," to get something for little or nothing, or to play heavy stakes for great prizes is an exceedingly common if not universal one.

In many professions the candidate knows that if he is to have any chance of winning great prizes he must put in great stakes in talents and in industry. If he realizes that he has not the former he does not try to come into that game.

But in medicine he can not help seeing that, in this country at least, the most money does not go to the profoundest pathologist, the most acute diagnostician, or even the really best practitioner. He has constantly before him the example of men who have won fortune with a very moderate proportion of professional attainment, but an excellent capacity for displaying all that they know and a very great deal of shrewdness in concealing what they do not know. It is not strange, then, that a youth with a certain quality of brain and a certain appearance of brainpan should conclude that the medical profession is the best market to which he can carry it.

Add to these three classes the few who drift into medicine as they might have drifted into anything else, and whose chances of success may be as good there as anywhere, and we certainly have an overcrowded profession. The medical schools until recently encouraged them all. Some do so still. Overcrowding means treading on each other's toes, scrambling, pushing, more or less decorous, certainly not tending to the dignity of the profession, going far beyond the bounds of generous rivalry and approaching dangerously near the manners and morals of advertising trades.

For remedies we have to place before the entrances to the profession, sieves coarse and fine, at least an entrance examination for admission to the schools and a State examination or a rigid inspection by the government of degrees and methods; the one of which, by its actual presence, and the other by the fear of its approach, would keep out the least competent. The first I would demand not only because certain subjects, like chemistry, physics, and elementary biology ought to be preliminaries to a medical education but because the student ought to know how to study. He cannot afford to spend his precious first year, which ought to be given to profitable work in dissecting room and laboratory, in learning how to make use of his opportunities.

The State examination should not deprive any American citizen of his inalienable right to be humbugged. If he wants it he should have it, but under its own name. But since the rights of the man of common sense and those of the community in general deserve to be protected as much as those of the seeker after miracles, the State has a right to say that those who publicly profess to be physicians in the ordinary sense of the word should have some preparation therefor. The process of waiting for the survival of the fittest is too tedious and too disastrous.

Between these two comes medical education, which is rapidly getting into a very healthy shape. The general recognition of the paramount importance of laboratory instruction in all branches of physical science, in other words making the student work himself instead of merely watching the results attained by the professor's experienced hand, is one of the important changes which is going on more rapidly now than ever before. In medicine this means clinical work, and especially clinical work in small classes. The small hospitals so rapidly springing up all over the country are a most important means to this end, and both they and the older and larger ones should be made to give such instruction to the largest possible number of students. The number of internes and externes should be increased to the widest limits consistent with the proper working of the institution. Much good material now goes to waste for want of orderly record and careful sifting which might be done by the aid of students to their own great advantage as well as to that of science.

No one can look over a series of French and German inauguration theses or the voluntary papers of many of our own young men, without recognizing how immense is the value in mental training of taking up some special subject under the guidance of an instructor and following it carefully and thoroughly. Every hospital in this country, large and small, should be a center of education for the profession and for the laity.

Medical education is advancing in the right direction, and that rapidly, but the end is not yet. It is only four or five years since a friend told me that he had met (I think in a so-called "consultation") a recent graduate who confessed that he had never felt a patient's pulse. A medical school without abundant laboratory facilities I would, if it were in my power, remorselessly stamp out. One without adequate clinical opportunities not only offered but with their careful use rigidly enforced I would treat with as little respect, unless it were willing to recognize distinctly and formally its position merely as a feeder.

But until sentiment changes, the pressure upon our sieves will be strong and some bad material will get through. For this change we and our children and children's children, will have to wait. When the community can be made to see that a humble place well filled is more honorable than a conspicuous one badly filled; that no profession carries with it respect and dignity except to him who has worthily won it, then and not before will medicine like the other professions cease to be overcrowded. I am very truly yours.

E.

Civil Service in State Institutions.

CHICAGO, ILL., Jan. 8, 1895.

To the Editor:—The readers of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION will no doubt be interested to learn that an attempt will be made to introduce into our State institutions a system of civil service reform in the formation of the medical staff. The affixed circular letter was recently sent to the trustees of the four insane asylums. The matter will be thoroughly discussed at an approaching meeting of the superintendents of the insane hospitals and the President of the State Board of Charities. The competitive examination will be impartial and no doubt patterned after that at the Cook County Hospital.

Yours truly, BOERNE BETTMAN.

STATE OF ILLINOIS, THE BOARD OF STATE COMMISSIONERS OF PUBLIC CHARITIES.

SPRINGFIELD, ILL., Dec. 20, 1894.

TO THE TRUSTEES OF THE ILLINOIS HOSPITALS FOR THE INSANE:

Gentlemen:—It is generally acknowledged by those who have had an opportunity to become familiar with the routine of our hospitals for the insane that the medical staff in all of them is numerically insufficient. In large institutions at least one medical attendant should be allotted to every 200 insane patients. In most of our hospitals a far greater number of insane are cared for by one physician.

The desire to better care for the insane and to stimulate scientific research induces us to recommend a system in use in most of the general hospitals of the world, viz.: The employment of internes. We suggest the appointment of one interne for every 400 patients cared for in each of the four insane asylums of the State. The appointments should be given to those who have obtained the highest mark in a competitive examination. The time of service of these internes is to be one year and a salary of $20 per month besides board and lodging.

All senior students of medical colleges in good repute with the State Board of Health, and those general practitioners of this State who have not practiced more than five years, are eligible to the examination. Vacancies in the staff of the regular assistant physicians should be filled from the ranks of these internes. We suggest that all further rules and regulations governing the appointment and employment of these internes be definitely settled at a meeting of the superintendents of the four State Hospitals and the chairman of this Board, to be hereafter called.

We also desire to impress upon the administrative officers of the various hospitals, that a well qualified pathologist is needed at each institution. The pathologist will be expected to organize staff meetings and to deliver regular courses of lectures on mental diseases and their allied branches. To

this end a laboratory should be equipped at each hospital.
By order of the Board.

BOERNE BETTMAN, M.D., President.
GEO. F. MINER, Secretary.

Approved by the Governor.

Jefferson Medical College.

To the Editor:—Many members of the Class of 1879 Jefferson Medical College, of Philadelphia, are desirous of having a class reunion on the occasion of the fifteenth anniversary of their graduation. Owing to changes, comparatively few addresses are known and therefore this means is resorted to, with the hope that every member of the Class of 1879 who reads this notice will communicate at once with their Class President, Dr. Philip R. Koons, Mechanicsburg, Cumberland County, Pa.

NECROLOGY.

DR. A. B. COOK.—Dr. Archibald B. Cook, of Louisville, Ky., died on the 2d inst. His death was caused by pleuro-pneumonia, but he has been in ill health for some time, not giving up until the very last, in fact making his rounds one day with a temperature of 105 degrees. Dr. Cook was born in Nobletown, Pa., sixty-six years ago. His father, John Cook, was a native of County Derry, Ireland. He received a liberal education in Wheeling, W. Va., and at Jefferson College in Allegheny County, Pa., and was a prominent member of the Franklin Literary Society of that College. In 1845 he received the degree of A.B., and in 1851 the degree of A.M. was conferred upon him. He studied medicine and graduated from the Medical College at Sharpsburg, Pa.; from the College of Physicians and Surgeons, New York, and from the Kentucky School of Medicine in this city, and began the practice of medicine in this city in 1855. He was a member of the AMERICAN MEDICAL ASSOCIATION, Kentucky State Medical Society, and was a vice-President of the College of Physicians and Surgeons, this city, now defunct. For years he was Professor of Surgery in the Kentucky School of Medicine, and for twenty years a surgeon of the Marine Hospital. He was a member of the local Board of Health and of the Board of Commissioners of Public Charities. On Feb. 12, 1872, Dr. Cook married Mrs. Fannie M. Roberts who died on Nov. 29, 1886. Six years ago he was again married, and his wife and one child survive him. In 1860 Dr. Cook was appointed on Gen. S. B. Buckner's staff with the rank of major.

DR. F. L. HARROD.—This bright and talented young physician was, so far as we can learn, shot down in cold blood at his home in Harrodsburg, Ky., and mortally wounded by Sheriff John T. Vanarsdell January 4. The shooting took place in front of Dr. Harrod's office. Vanarsdell approached and without any other words than an oath, fired at the Doctor, the bullet taking effect in his chest, and after he had fallen was shot again in the stomach. The wounded man expired without regaining consciousness. Dr. Harrod was 33 years of age and was a lineal descendant of the pioneer John Harrod, the founder of the town which bears his name. He was graduated from the Louisville Medical College in 1891, and began the practice of medicine in Harrodsburg. He was local pension examiner, and local observer of the Kentucky State Weather Service. The remains were buried in Lexington, Ky., with military honors, as the deceased was assistant surgeon to the Second Regiment, K. S. G.

DR. ADAM HARTHILL.—Dr. Adam Harthill, one of the leading veterinary surgeons of Louisville, died at his residence on the 30th ult., aged 39 years. He was born in England but came to this country when young and settled in Louisville soon after.

JAMES F. RHOADS, M.D., of Philadelphia, January 2.——Wm. A. Elder, M.D., of Bloomington, Ill., January 3, aged 69.——William Osgood, M.D., of North Yarmouth, Me., December 25, aged 69.——Homer Campbell, M.D., of Racine.——John S. Robertson M.D., of Whiteville, Tenn., December 26, aged 75.——A. S. Huston, M.D., of Anderson, Ind., December 28.——G. W. Jones, M.D., formerly of Covington, Ind., at the Bermuda Islands, January 7, aged 50.

PUBLIC HEALTH.

Diphtheria Antitoxin.—Surgeon-General Sternberg, U. S. A., has detailed Assistant Surgeon Charles B. Ewing to establish a diphtheria antitoxin "plant" at Jefferson Barracks, Mo., and Dr. Ewing has already procured a number of horses which after being subjected to the mallein and tuberculin tests and otherwise proved healthy, will be utilized for this purpose.

New York's Lowest Death Rate.—Calculated on an estimated population of 1,957,452 the death rate of New York city for 1894 was 21.05 per thousand—the lowest in the history of the city. There were 41,212 deaths during the year, of which 4,752 were from pneumonia, 4,687 from phthisis, 2,492 from Bright's disease, 2,371 from diphtheria, 2,177 from heart disease, 541 from scarlet fever and 156 from smallpox. Following are the death rates for the preceding six years:

1888	25.23	1891	24.73
1889	24.07	1892	24.26
1890	23.51	1893	23.52

Epidemic Diseases.—Influenza or "grip," which seems to have been lurking in the country since its epidemic prevalence in 1891-92, is assuming formidable proportions in New York and Brooklyn. In the former city 7 deaths were reported from the disease last week, with 3,000 cases under treatment. In Brooklyn, Dr. R. M. Wyckoff, Deputy Health Commissioner and Dr. Ezra M. Wilson, bacteriologist of the Board of Health, were reported suffering from severe attacks. The Board is having more than its share of sickness, Dr. L. C. Ager, sanitary inspector, and Dr. Jerome B. Thomas, assistant bacteriologist, also being disabled, the former with typhoid fever and the latter with diphtheria contracted in the laboratory.

Dr. Wingate, Secretary Wisconsin State Board of Health, reports, January 7, smallpox at Chippewa Falls, Manitowoc Rapids Tp., Mishicott and Milwaukee—sixty-eight cases in the latter city, twenty-seven in hospital and forty-one in homes. From another correspondent it is learned that the outbreak at Manitowoc Rapids is due to infected goods stolen from the smallpox hospital occupied at that place in the summer of 1894. Dr. Probst, Secretary of the Ohio State Board of Health, reports January 4, smallpox at Mansfield, Toledo and Millersport. Dr. Scott, Secretary Illinois State Board of Health, reports, January 7, an outbreak of smallpox at Kirkland, DeKalb County, which it is feared may be serious owing to the fact that the first case was treated as measles and an unknown number of persons exposed. The Detroit City Board of Health discovered January 4, that a carpenter, who had been employed on the new smallpox hospital, had contracted the disease and had been under treatment for ten days by a "Christian scientist;" the scientist has been arrested and will be prosecuted. On the 9th inst., there were eighty-six cases in the Chicago smallpox hospital; none in homes so far as known to the Health Department.

A cable dispatch of the 9th inst., confirms the reports of Dr. Cleary, Sanitary Inspector U. S. M. H. S., at Rio de Janeiro, as to the existence of Asiatic cholera in the Argentine Confederacy. The dispatch announces that it has been proclaimed epidemic in the provinces of Rosario and Santa Fe. Dr. Cleary had previously reported its extension along the line of the Sao Paulo Railway to a number of towns and railway stations in the Brazilian States of Sao Paulo and Rio de Janeiro, in consequence of which railway travel had been suspended and communication between the infected district and the port of Rio cut off. The comma bacillus of Koch had been discovered in most of the cases and the pretext of "choleriform diarrhea" had been abandoned; isola-

tion, disinfection and quarantine measures are rigidly enforced and it is hoped to prevent the infection of the port, although one case had appeared which Dr. Cleary believes to have been cholera.

MISCELLANY.

Medical Examiners in Georgia.—We are informed that Georgia now has three Medical Examining Boards, one Regular, one "Homeopathic" and one "Eclectic."

Personal.—John L. White, M.D. of Bloomington, Ill., who was recently elected a member of the Legislature has resigned his position as a surgeon of the Chicago and Alton Railroad. He is an old and valued member of the AMERICAN MEDICAL ASSOCIATION.

Medical College of Indiana.—The Faculty of the Medical College of Indiana held a meeting December 14. It was decided to erect a new building at a cost of not less than $50,000.

New Health Officer.—Governor Levi P. Morton, of New York, has recognized the general voice of the New York profession, by appointing Dr. Doty, of the City Board of Health, to be Health Officer of that port, *vice* Wm. T. Jenkins, M.D. No one could read the report of the New York Academy of Medicine on the conduct of quarantine in 1892, without realizing that the quarantine has, to say the least, been in very unsafe hands during the Jenkins *regime*.

Cancer of the Breast, Operation Without Suture.—M. Berrut reported a case of a woman in whom he made, twenty years ago, ablation of cancer of the breast. The wound was left open and healed by granulation. The cure was definite and has been maintained, until now when it was seen twenty years after the operation.—*Revue de Chirurgie*, November, 1894.

Army Medical School.—There are only two Assistant Surgeons in attendance at the current session of the Army Medical School as against seven in 1893-94. The Secretary of the Faculty, Walter Reed, Major and Surgeon, U. S. A. writes: "Decreased attendance at the session of 1894-95 is due to reduction of number of Assistant Surgeons, U S. A., by recent act of Congress; otherwise our class would have numbered twelve. Our session only extends from November 1 to March 1 (four months) and is intended to give to recently appointed Assistant Surgeons careful instruction in bacteriology (especially the study of pathogenic organisms) in pathology of tumors, blood, urine, etc., and work in the chemic laboratory, embracing examinations of water, air, urine, adulteration of foods, etc."

The Index Medicus.—The following circular has been issued:

CHICAGO, Jan. 1, 1895.

Dear Doctor:—Since 1885 the Index Medicus has been carried on at a loss to the publisher, and without compensation to the editor, and within the last year the subscription list has so far diminished that the journal will cease to appear unless very substantial support is given by the profession.

The undersigned, committees of the Chicago Medical Society and Chicago Academy of Medicine, deplore the loss to American medicine that will accrue from the discontinuance of this valuable publication. It is the most complete bibliography of medicine that has ever been published, and the only one in the English language. The physicians of Chicago ought to feel a strong interest in maintaining this publication, as it is the only index to the vast accumulations that are added yearly to the Newberry Library. Will you not lend your support to the Index by sending a subscription to Dr. H. N. Moyer, 910, 103 State Street, or to the publisher, Geo. S. Davis, Detroit, Mich?

Very truly yours,

NICHOLAS SENN, M.D. JAS. G. KIERNAN, M.D.
J. C. HOAG, M.D. H. N. MOYER, M.D.
W. H. WILDER, M.D.

Thoracotomy in Sarcoma of the Breast.—M. Vautrin, of Nancy, at the Congrès Francais de Chirurgie, (*Revue de Chirurgie*, November, 1894) said that the indication for thoracotomy presented itself more often than is commonly thought, in cases of malignant tumors of the chest wall. These tumors give a grave prognosis and but little hope of survival, and in their evolution they arrive rapidly at invasion of the lung. This invasion is a contra-indication to operation, and it is a delicate point of diagnosis to determine this point with precision. Superficial tumors of the female breast, rarely invade the deeper structures but sarcoma constitutes an occasional exception. The deep tumors are generally recurrences of carcinomata. The contest is generally abandoned at this stage, although thorough intervention may give results. M. Vautrin has twice practiced thoracotomy under the following conditions:

1. A young woman of 19 years was attacked with a large sarcoma of the breast. In the course of the operation for removal it was seen that the ribs were invaded, and they were removed; it was then found that the pleura was also affected, and it was also resected. The air entered the thoracic cavity and caused syncope. After five minutes the pulse returned and he was able to complete the operation. This patient was cured and remained well.

2. This case was a recurring carcinoma of the breast, having invaded three ribs and seven centimeters of the pleura. These were excised, the sequelæ were simple and the wound was healing by granulation.—*Revue de Chirurgie*, November, 1894.

Statue of Charcot.—The pupils and former associates of Charcot in Paris and throughout France are engaged in raising a fund for the erection of a bronze statue of him in the Salpêtrière. This movement is now receiving cordial and material support in Germany, in England and in Italy. It has therefore seemed desirable to the neurologic societies of New York and Philadelphia that the profession in America join in this testimonial as an evidence of the eminent services of Charcot in neurology and medicine. For this purpose the undersigned have been appointed a committee to bring the matter to the attention of the profession and to receive contributions, which will be duly acknowledged and forwarded to the Central Committee in Paris. It is requested that all who desire to contribute to the success of this undertaking send their subscriptions to the members of the committee nearest them or direct to the treasurer, Dr. C. A. Herter, 819 Madison Avenue, New York, before the first day of February, 1895.

For New York.—E. D. Fischer, E. C. Seguin, M. A. Starr, C. L. Dana, C. A. Herter.
For Philadelphia.—S. Weir Mitchell, Wharton Sinkler, Chas. K. Mills.
For Boston.—J. J. Putnam, P. C. Knapp.
For Baltimore.—William Osler.
For Chicago.—Archibald Church.
For St. Louis.—C. H. Hughes, F. R. Fry, L. Bremer.
For Montreal, Canada.—James Stewart.
For Rochester.—E. B. Angell.
For Buffalo.—J. W. Putnam.
For Pittsburg.—Theodore Diller.
For Denver.—Howell T Pershing.
For San Francisco.—J. D. Hirschfelder.

December 22, 1894.

Abandonment of Fort McKinney, Wyoming.—This military post was situated on Clear Creek, a branch of Powder River, about fifteen miles east of the main range of the Big Horn Mountains, two miles west of the settlement of Buffalo and thirty-three miles south of Clearmont, the nearest station of the Burlington and Missouri River Railroad. Its site was a table land elevated about forty feet above the level of the stream and composed of smooth boulders and gravel overlaid by clay. The climate was regarded as pleasant, most of the winter weather being clear and bright; and although the temperature sometimes dropped four below zero these cold spells were of short duration. The average annual

rainfall, about ten inches, occurred mostly in the spring months during which the weather was damp, chilly, extremely changeable and productive of tonsillitis and catarrh of the respiratory organs. The supply of water was unlimited and of excellent quality derived from Clear Creek, an unpolluted stream from the Big Horn Mountains. It was pumped by stream into a distributing tank. The creek furnished also water for irrigation, and post gardens were successfully cultivated. Waste water was carried off by pipes and delivered into neighboring ravines. Vaults were used for excreta as there was no sewerage system; nor was it considered possible to have water carriage disposal as the town of Buffalo was two miles below on the same water course. At the time the post was broken up, efforts were being made to introduce the dry earth system. The barrack buildings were large one-story log structures, ceiled and floored and with wide veranda in front. They gave about seven hundred cubic feet of air space to each man of the authorized occupancy, and were well ventilated through eight-inch inflow pipes opening into jacketed stoves, with outflows in the ceiling under louvres in the ridge of the roof. The hospital was of similar construction, its ward giving about eleven hundred cubic feet of air space to each of ten beds. The officers' quarters, disposed in the arc of a circle on one side of the parade ground, consisted of fourteen one-story and attic buildings with yards inclosed by a picket-fence. These houses were warmed with difficulty in winter on account of cracks about the casings. The post bath-house, built of pressed brick, contained a large plunge bath with eight attached dressing rooms and eight single bathrooms each furnished with hot and cold water taps; but the boiler was unequal to the task of of providing hot water for all the baths at one time and the use of the plunge bath was in consequence confined to warm weather. There was no gymnasium; but in summer the men found plenty of exercise in drills, fatigue duty, hunting, fishing, baseball, etc. In winter, however, facilities for systematic exercise were lacking. On the abandonment of the post the reservation was turned over to the Department of the Interior.

Liability of Railroads for Improper Medical or Surgical Treatment.—Can a railroad company be held liable for the mistakes of physicians whom it may call to care for its passengers? And in the treatment of an injured employe, should the managers of the railroad comply with the directions of the surgeons who are called to attend him, or should they assume superior knowledge with reference to his proper treatment, and act in accordance with their own judgment? These and several other interesting questions are asked and answered by the Supreme Court of Kansas in the case of the Atchison, Topeka, & Santa Fe Railroad Company v. Zeiler, decided Nov. 10, 1894. It appears that a brakeman had his leg crushed at Woodward, in the Indian Territory. By direction of a surgeon, he was transported into Kansas. After his death, this action was brought against the railroad company to recover for improper treatment received by him, no claim being made on account of the original injury. The jury, in answer to a special question, found that he died from the injury received in the Indian Territory, and consequent loss of blood. All that was done by the railroad company and its employes was under and in accordance with the direction and advice of competent surgeons, in whose selection there was no claim of want of care.

In a former case (Railroad Co. v. Weber, 33 Kan. 543) this court held that it was the duty of a railroad company to exercise reasonable and ordinary care in temporarily providing for the protection and comfort of a sick, unconscious, and unattended passenger. It says that it may be conceded that it was the duty of the railroad company to so provide in this instance. The substantial question became, therefore, as to the measure of that duty and the extent of the railroad company's liability for any improper treatment, the deceased might have received. The court then goes on to say that a railroad company, in the transportation of persons and property, is held to the use of skill as well as care and diligence is well settled. Railroad companies are chartered for the purpose of transporting persons and property by the use of the power of steam. In fulfilling their duties to the public, they are required to be skilled in the business in which they are engaged. Each officer and employe must be selected with reference to his qualifications and fitness for the discharge of the particular duty imposed on him. But the care of persons suffering from wounds, bruises, or illness, is a matter altogether distinct from the transportation of persons and property. To provide for the needs of such, we have the learned profession of physicians and surgeons. The law requires that those who assume to practice medicine and surgery shall possess certain qualifications of skill—shall have received education and training, fitting them for their calling. For these reasons, if there was, in this instance, excessive bleeding, which might have been preventd during the hour's ride from one station to another, it was clearly not the fault of the train hands, for they could not be held to the exercise of any degree of medical or surgical skill. And how could it be said to be the fault of the train master, or of any superior officer of the company? They had called competent physicians and were taking the injured man to the hospital in accordance with their advice. When the transfer from a freight to a passenger train was made, under the advice, and by the direction of a physician, the court holds that it was the latter's duty to have examined the wound and the condition of the patient to have determined whether he was in a condition to endure the journey, or whether it would be better to remove him from the cars and amputate the limb at once. If it were determined that the journey should be made, it was his duty to see that the wound was properly dressed; that the patient was provided with those things that were necessary for his safety and comfort. The employes of the company whose primary duty was to operate the train could not be expected to exercise surgical skill, or to do more than carry out any directions the surgeons might give for his safety and comfort. Coming back to the principal question, the law is well settled, the court says, that a railroad company having used reasonable care in his selection, is not chargeable with the want of skill in a physician or surgeon whom it calls for a passenger or injured employe, and this is so even where the law requires a steamship company, transporting immigrant passengers to carry a physician. Consequently, a railroad company which procures competent surgeons to attend a brakeman injured in its employ and proceeds to transport him to a hospital, in pursuance of the advice and direction of such surgeons, and complies with all their directions as to his safety and care, is not liable for any mistake, error in judgment, or want of foresight in such surgeons. And on these grounds a judgment rendered in the court below against the railroad company is reversed, the railroad being held not liable, under the circumstances stated, for the death of the injured man.

Hospital Notes.

THE NEW HOSPITAL FOR COOPER COLLEGE, SAN FRANCISCO.—During the meeting of the AMERICAN MEDICAL ASSOCIATION at San Francisco the members were given at Cooper Medical College an entertainment, during which they were shown the new hospital which was being erected in connection with the college. This hospital is now completed and its opening was formally inaugurated on Jan. 2, 1895, by an address by the donor, Dr. Levi Cooper Lane, and a surgical operation performed by him in the presence of the students of the college, the Faculty and other physicians. The institution will bear the name of the donor, and has been erected by him at a cost of $160,000. The building is of brick with granite facing; it has a frontage of 140 feet on Clay Street, and a depth of 130 feet on Webster Street, and has accommodations for over one hundred patients. In the arrangements for ventilation, heating, lighting and quantity of air for each bed, the building corresponds to the best models of modern times. The equipments of Lane Hospital are such that the unfortunate sick who seek this retreat will find it a home provided with every comfort and all the means which can relieve their sufferings and restore them to health. The medical and surgical service will, in the main, be rendered by the Faculty of Cooper College, yet other physicians will be allowed to place their patients here, treat them and collect such fees as may be agreed upon between the parties.

Three men of generous heart have made liberal contributions for the future support of the hospital, viz.: Capt. James M. McDonald, $58,000; Col. Claus Spreckels, $25,000; and Mr. A. B. McCreery has given $6,000 for the perpetual maintenance of a bed. It may be interesting to the friends of the donor of Lane Hospital and Cooper Medical College to state, that the aggregate of his gifts to those institutions in money and lands amounts to nearly half a million of dollars; and that in respect to Cooper Medical College, during the eleven years which have elapsed since its erection, its

successful career has surpassed his most sanguine anticipations; the class of students having grown from 40 matriculates in 1882 to 220 in 1894. The newly added hospital insures the permanency of, and must add to, the prosperity of the medical institution; and the donor is justified in the belief that the wish which accompanied this last gift, and in marble letters is written at the entrance of the building, will have ample realization; that the healing art will here have the opportunity of exercising its humane skill, and suffering humanity will here find sympathy and relief from its afflictions.

Louisville Notes.

CITY AMBULANCE.—The ambulance recently ordered by the Board of Public Safety has been completed, and was placed in service January 8. It is of neat and modern design and thoroughly equipped.

DEATH REPORT.—From Jan. 1 to Dec. 31, 1894, there were 3,062 deaths; estimated population 200,000, death rate for the year per 1,000 inhabitants 15. The corresponding rate for the year 1893 was 16 per 1,000 inhabitants. For the month of December the report shows there were twenty-two deaths from diphtheria; thirty-four from consumption; sixty-seven from pneumonia; ten from bronchitis.

SPRING AND SUMMER MEDICAL COLLEGES.—The Kentucky School of Medicine began its session of 1895 in its new building on the 3d inst. The first clinical lecture was delivered by Dr. W. H. Wathen, Dean.

THE HOSPITAL COLLEGE OF MEDICINE and the Louisville College of Dentistry began their sessions on the 2d, the opening lecture being delivered by Dr. J. A. Larrabee, President of the Faculty, who was followed by Dr. P. R. Taylor, Dean of the Medical Department.

G. A. R.—Health Officer White has been appointed Chairman of the Committee on Medical Matters, for the encampment of the G. A. R. in this city September next.

VACCINATIONS.—Under the new ordinance recently reported in these columns, Health Officer White has vaccinated up to date 2,822 poor children who were unable to pay a physician for his services. About an equal number of the school children have lately been vaccinated at the expense of their parents.

CORONER'S YEARLY REPORT.—Coroner McCullough has just submitted his yearly report. Altogether it has been a season of unusual activity for the Coroner, the number of calls being considerably in excess of last year. The number of homicides last year was twenty-seven; the number this year thirty-three. There were thirty suicides last year; this year thirty-four. The statistics for suicides show a larger number of negroes who sought death by their own hand than for a number of years past, the number for this year being five. Last year there was but one, and in 1890 there were no negro suicides. Some of the causes of death were as follows: Drowning, twenty-four; railroad accidents, eighteen; electricity, three; heart disease, thirty-nine; burned, ten; convulsions, twenty-four. In all, there were 400 calls during the year.

THE CORONER.—The first of the year presents a complicated case in the position of coroner. The returns from the recent political landslide show that Dr. J. C. Hood, the Republican nominee for coroner, was elected by a large majority. The election was contested, but the board decided that it could not go behind the face of the returns, and Dr. Hood is elected.

Academy of Surgery, Philadelphia.—(By telegraph to this JOURNAL).—At the annual election of officers of the Academy of Surgery, December 7, Dr. Thomas G. Morton was elected President for the ensuing year. Dr. John B. Deaver delivered the annual oration on Surgery.

THE PUBLIC SERVICES.

Army Changes. Official list of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from Dec. 29, 1894, to Jan. 4, 1895.

Major WASHINGTON MATTHEWS, Surgeon, leave of absence granted on surgeon's certificate of disability, is extended four months on surgeon's certificate of disability.

First Lieut. JAMES M. KENNEDY, Asst. Surgeon, is granted leave of absence for one month, on surgeon's certificate of disability, with permission to leave the limits of the Department.

Major ROBERT H. WHITE, Surgeon, is granted leave of absence for one month, to take effect about Dec. 24, 1894.

Capt. JAMES D. GLENNAN, Asst. Surgeon, the order assigning him to duty at Snelling, Minn., is revoked.

First Lieut. HENRY A. SHAW, Asst. Surgeon, the order assigning him to duty at Ft. Niobrara, Neb., upon the abandonment of Ft. McKinney, Wyo., is so amended as to direct him to report for temporary duty at Camp Merritt, Mont., and upon the completion thereof to proceed to Ft. Snelling, Minn., for duty at that post.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for the week ending Jan. 5, 1895.

Medical Director MICHAEL BRADLEY, detached from duty as a member of the Naval Examining and Medical Boards.

Medical Director B. H. KIDDER, ordered as member of the Naval Examining and Medical Boards.

Surgeon J. B. BARKER, ordered to special duty in connection with the investigation of the Ford Theater disaster.

P. A. Surgeon LEWIS H. STONE, promoted from Asst. Surgeon.

P. A. Surgeon F. J. B. CORDEIRO, ordered to study the subject and make a report to the Department of the therapeutic value of antitoxin in the treatment of diphtheria and croup.

Marine-Hospital Changes.—Official list of changes of stations and duties of medical officers of the U. S. Marine-Hospital Service, for the sixteen days ended Dec. 31, 1894.

Surgeon GEORGE PURVIANCE, relieved from command of Service at Philadelphia, Pa., and detailed as medical inspector of immigrants at that port, Dec. 18, 1894.

Surgeon F. W. MEAD, directed to proceed to New York, N. Y., for temporary duty, Dec. 27, 1894. To rejoin station (Washington, D. C.), Dec. 29, 1894.

Surgeon H. R. CARTER, granted leave of absence for twenty-four days, in lieu of leave granted Nov. 20, 1894, Dec. 21, 1894.

P. A. Surgeon C. T. PECKHAM, to inspect unserviceable property at San Francisco M. H., Dec. 26, 1894.

P. A. Surgeon P. C. KALLOCH, to report at Bureau for special temporary duty, Dec. 29, 1894.

P. A. Surgeon W. D. BRATTON, placed on waiting orders, to date from Jan. 1, 1895, Dec. 26, 1894.

P. A. Surgeon G. N. MAGRUDER, granted leave of absence for ten days, Dec. 22, 1894. Leave of absence extended five days, Dec. 31, 1894.

P. A. Surgeon T. B. PERRY, to proceed to New York, N. Y., for temporary duty, Dec. 28, 1894.

P. A. Surgeon J. O. COBB, granted leave of absence for three days, Dec. 28, 1894.

P. A. Surgeon J. C. PERRY, to proceed to Philadelphia, Pa., and assume temporary command of Service, Dec. 18, 1894.

Asst. Surgeon J. A. NYDEGGER, granted leave of absence for three days, Dec. 18, 1894.

Asst. Surgeon RUPERT BLUE, to proceed to San Francisco, Cal., for duty, Dec. 18, 1894. Granted leave of absence for six days, Dec. 24, 1894. To proceed to Cincinnati, Ohio, for temporary duty, Dec. 28, 1894.

Asst. Surgeon EMIL PROCHAZKA, granted leave of absence for twenty-five days, Dec. 17, 1894.

Asst. Surgeon H. S. CUMMING, leave of absence granted Nov. 27, 1894, canceled Dec 20, 1894. Granted leave of absence for seven days, Dec. 31, 1894.

LETTERS RECEIVED.

Alderson, Jas., Benton, Wis.; Andrus, A. P., Ashland, Wis.

Bates, X. T., Poughkeepsie, N. Y.; Babcock, R. H., Venetian Building, Chicago; Brignac F. Jr., Paulina, La.

Collins, S., Globe, Ariz.; Cullum, R. H., St. Paul, Minn.; Cone, Andrew, New York, F. Y.; Church, Archibald, Chicago; Cutter, Ephraim, New York City; Cook, A. W., Wheatland, Iowa.

Dumrell & Upham, Boston, Mass.; de Schwelnitz, E. A., Washington, D. C.; Duffield, H., Pittsfield, Ill.; Davis, Geo, S., Detroit, Mich.

Ewing, F. C. Asheville, N. C.; Edes, R. T., Boston, Mass.; Eastman, Thos. B., Indianapolis, Ind.

Faber, P. G., Chicago, Ill.; Foote, N., Colchester, Conn.; Febrinol & Chemical Co., Chicago; Ferguson, F., New York, N. Y.

Green, Le Roy, Waterford, Ont.; Gifford, H., Omaha, Neb.; Gihon, A. L., Washington, D. C.; Gardner, F. A., Washington, D. C.

Hill, Gershom, H., Independence, Iowa; Hopkins, J. G., Thomasville, Ga., Howe, Edw. D., St. Louis, Mo.; Hassinger, A., Charlie, Texas; Hügler, E., Springfield, Ill.; Harlan, A. W., Chicago; Hoag, J. C., Chicago; Hulbert, Geo. F., St. Louis, Mo.

Jackson, Edward, Denver, Colo.; Jones, Thos. R., Milwaukee, Wis.

Kercher, John, Chicago; Kelly, W. H., Covington, Ky.; Kempf, Paul H., Ferdinand, Ind.; Kalb, Geo. B., Jeddo, Pa.; Kenyon News & Postal Subscription Co., Chicago.

Lycston, J. F., Chicago.; Lippincott, J. B., Company, Philadelphia, Pa. Mann, Edw. C., New York, F. Y.; Maltine Mufg Co., New York, N. Y.; Meyer, Chas. & Co., New York, N. Y.; Meyrowitz, E. B., New York, N. Y.; Manley, C. S., South Denver, Colo.; Mattner, E. H., San Francisco, Cal.; McCormac, J. T., Marshfield, Oregon; McFarland, W., Waterbury, Conn.; Moyer, Harold, N., Chicago.

Narr, Thos. S., Indianola, Iowa.

O'Brien, J. S., Milwaukee, Wis.; O'Nell, J. W., Chicago.

Reynolds, H. T., Baltimore, Md.; Rush Medical College, Chicago; Ramsey, Geo. D., Boston, Ky.; Register & Montgomery, Drs., Charlotte, N. C.; Raeder, J. W., Wilkes Barre, Pa.; Rational Chemical Co., St. Louis, Mo.; Remarque, C. E., Petaluma, Cal.; Roy, Dunbar, (2) Atlanta, Ga.

Stauffer, W. H., Arkansas City, Kan.; Shirk, J. K., El Paso, Texas; Scott, Robt. J., Plattsburg, N. Y.; Sampson, E. S., North Syracuse, N. Y.; Subscription News Co., Chicago, Ill.; Surgeon General U. S. A., Washington; Tuley, Henry E., Louisville, Ky.; Torey, E. J., Freeport, Ill.; Truax, Greene & Co., Chicago.

Vaughan, Geo. L., Berlin, Germany.

Wahrer, C. F., Ft. Madison, Iowa; Wheeler Chemical Co., Chicago; Wyman, Hal. C., Detroit, Mich.; Woods, J. F., Toledo, Ohio. Woodbury, Frank, Philadelphia. Young, Ira C. Palmyra, Ill.